

# **PUPILS WITH AUTISM**

## **UNIT 12**

### **EVIDENCE BASE FOR EDUCATIONAL INTERVENTIONS**

#### **LEARNING OUTCOMES**

#### **TRAINEES WILL**

- Understand the current evidence from research supporting educational interventions for pupils on the autism spectrum
- Appreciate the issues around conducting research on educational interventions
- Consider two approaches to working with pupils on the autism spectrum
- Have a framework within which to determine which interventions might be useful to follow for a particular pupil
- Understand some of the issues in training staff to make interventions, and
- Have ideas about how staff might collect data to evaluate the effectiveness of interventions.

#### **ONLINE RESOURCES**

The content and tasks throughout these PDFs are supported by online resources that are designed to facilitate and supplement your training experience.

Links to these are signposted where appropriate. The resources use graphics and interactive elements to:

- Highlight salient points
- Provide at-a-glance content summaries
- Introduce further points of interest
- Offer visual context
- Break down and clearly present the different stages and elements of processes, tasks, practices, and theories

The online resources offer great benefits, both for concurrent use alongside the PDFs, or as post-reading revision and planning aids.

Please note that the resources cannot be used in isolation without referencing the PDFs. Their purpose is to complement and support your training process, rather than lead it.

You should complete any learning or teaching tasks and additional reading detailed in this PDF to make full use of the Advanced training materials for autism; dyslexia;

speech, language and communication; emotional, social and behavioural difficulties; moderate learning difficulties.

To find out more about the resources, how they work, and how they can enhance your training, visit the homepage at: [www.education.gov.uk/lamb](http://www.education.gov.uk/lamb)

The first resource for this unit can be found here:  
[www.education.gov.uk/lamb/autism/interventions/intro](http://www.education.gov.uk/lamb/autism/interventions/intro)

## **BRIEFING 1**

Many different educational interventions have been devised specifically for pupils on the autism spectrum or adapted from interventions originally designed for a broader population. With a growing understanding of autism, a consensus is developing on the types of intervention that are most likely to be effective.

Given the range of needs within the autism spectrum, it is not likely that a single intervention will meet all the needs of an individual pupil or that a particular approach will be appropriate for all. There are inevitably limitations, as well as potential strengths, for all interventions, and these will vary in relation to individual pupils. What is crucial, however, is that interventions are based on an assessment of pupils' needs and that the effectiveness of particular interventions are monitored and evaluated and only continued if they are proven to benefit the pupil.

Because interventions are decided as a result of assessment, it is rare for schools to adopt and follow just one approach or intervention. The most effective interventions are tailored to the needs of particular pupils.

It is important to seek the views of pupils and their parents before an intervention and during its implementation. Some interventions require staff to be trained and this will be a key role for specialist teachers with training in autism if interventions are to be effective.

### **Making decisions about interventions**

When parents are told that their child is on the autism spectrum, they generally ask questions around two particular areas:

- What is autism/Asperger syndrome?
- What can be done to help my child?

Similarly, a class teacher or support assistant will have similar concerns when told that a pupil on the autism spectrum is going to join their class. As they read the

literature, talk to other parents, see TV programmes and talk to local professionals, they may become confused as to what seems the best course of action to take. Within each school, there should be at least one named person whose role is to gain knowledge on autism and to keep up to date with current understandings and interventions. Information on these can then be disseminated to staff and used when questions arise from parents and staff alike. It is also extremely helpful to have a set of questions to ask about any intervention that is suggested – which are universal and can be asked in relation to strategies that are not currently known or used – but have been mentioned in the media of TV, newspapers and the Internet. The materials in this section will enable staff to seek answers to key questions in order to advise their colleagues in school and to support parents in their quest to find the most useful interventions to support an individual child.

Some staff may be trained in interventions for use with children with autism, before they have had any training in autism itself. This is not good practice as teachers need to understand autism first, in order to make sense of the rationale of an intervention and to use it flexibly in line with a child's needs.

## **Educational interventions**

There are currently a variety of 'named' educational interventions used in schools in the UK with pupils on the autism spectrum. These are considered below.

In addition, many practitioners and parents have adapted or developed approaches and interventions that they have found to be effective. Much of which has been written up and is available for teachers, for example:

- The journal, 'Good Autism Practice'<sup>1</sup> publicises such work, in addition to having articles on the use of the more well-known approaches. The British Institute of Learning Disabilities (BILD) has recently published a reader which celebrates the first ten years of the Journal and contains a selection of articles that specialist teachers of autism will find to be useful for reference; and
- The Autism Education Trust's 'Tools for Teachers'<sup>2</sup>, in which practitioners share tried and tested resources and approaches for teaching pupils with autism.

Interventions can be classified into three broad groups according to the number of areas of development which they address:

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<sup>1</sup> The Good Autism Practice Journal is published by BILD and details of how to subscribe can be found at [www.bild.org.uk](http://www.bild.org.uk)

<sup>2</sup> Available at [www.autismeducationtrust.org.uk](http://www.autismeducationtrust.org.uk)

- some work on many different areas of behaviour and functioning and their proponents might argue that there is no need for an individual to receive any other intervention;
- some work on fewer areas of functioning and interventions, and
- others are designed to be very specific in the skills or behaviours they promote or address.

### Research evidence on educational interventions

A number of reviews have been made of current and recent research on interventions (see Parsons et al.<sup>3</sup>; Jones and Jordan<sup>4</sup>; Humphrey and Parkinson<sup>5</sup>; Jordan, Jones and Murray (1998)<sup>6</sup>. Gough (2007)<sup>7</sup> has also written about how one might measure the 'weight of evidence' presented in research studies. Most reviews conclude that there is only still an emerging evidence-base for many current interventions used in the UK in terms of their effectiveness in real world contexts such as schools, homes and classrooms. Until recently, sample sizes were often small (less than 20); however in the past decade there have been a number of larger and better-controlled studies, including randomised controlled trials, of different intervention approaches although most have been conducted with preschools and only a few have been delivered in schools. In addition most studies are relatively short-term (less than 12 months).

### See online resource:

[www.education.gov.uk/lamb/autism/interventions/evidence](http://www.education.gov.uk/lamb/autism/interventions/evidence)

There is a very helpful website which summarises the current research on most interventions used with children with autism at [www.researchautism.net](http://www.researchautism.net). In recognition that the evidence for intervention is not strong, the National Institute for Clinical Excellence (NICE) has recently set up a development group to create guidance on how children with autism are best supported. This will be out for consultation in 2013.

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<sup>3</sup> Parsons, S., Guldberg, K., MacLeod, A., Jones, G., Prunty, A and Balfe, T (2009) *International review of the literature of evidence of best practice provision in the education of persons with autism spectrum disorders*, Dublin: NCSE

<sup>4</sup> Jones, G and Jordan, R (2008) Research base for intervention in autism, in E. McGregor, M. Nunez, K. Cebula and JC Gomez (Eds), *Autism: an integrated view from neurocognitive, clinical and intervention research*, Oxford: Blackwell

<sup>5</sup> Humphrey, N. & Parkinson, G. (2006) Research on interventions for children and young people on the autistic spectrum: a critical perspective, *Journal of Research in Special Educational Needs* 6 (2) 76–86

<sup>6</sup> Jordan, R, Jones, G and Murray, D (1998) Educational interventions for children with autism: a literature review of recent and current research, Report 77, Sudbury: DfEE

<sup>7</sup> Gough, D (2007) Weight of evidence: a framework for the appraisal of quality and relevance of evidence, in J. Furlong and A. Oancea ( Eds.) Applied and practice-based research, special edition of *Research Papers in Education*, 22, 2, 213-228

The interventions reviewed include:

- interactive approaches
- approaches to enhancing social communication abilities
- Social Communication/ Emotional Regulation/ Transactional Support (SCERTS)
- Option
- Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH)
- Daily Life Therapy
- Cognitive behaviour therapy, and
- Behavioural approaches, including early intensive behavioural intervention.

There are also a number of other reviews on interventions which are very helpful to guide teachers and parents on what might be effective and why (Connor, 1998<sup>8</sup>; Dawson and Osterling, 1997<sup>9</sup>; Freeman, 1997<sup>10</sup>; Harris and Handleman, 1994<sup>11</sup>; Howlin, 1998<sup>12</sup>; Jordan and Jones, 1999<sup>13</sup>; Prizant and Rubin, 1999<sup>14</sup>; and Webster et al., 2002<sup>15,16,17,18,19</sup>). These point to a growing consensus on the features of

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<sup>8</sup> Connor, M (1998) A review of behavioural early intervention programmes for children with autism, *Educational Psychology in Practice*, 14, 2, 109-117

<sup>9</sup> Dawson, G and Osterling, J (1997) Early intervention in autism, in M Guralnick (Ed.) *The effectiveness of early intervention*, Baltimore: Brookes

<sup>10</sup> Freeman, B J (1997) Guidelines for evaluating intervention programs for children with autism, *Journal of Autism and Developmental Disorders*, 27, 641-645

<sup>11</sup> Harris, S.L. and Handleman, J.S. (1994) *Preschool education programs for children with autism*, Austin, TX: Pro-Ed

<sup>12</sup> Howlin, P (1998) Practitioner review: psychological and educational treatment for autism, *Journal of Child Psychology and Psychiatry*, 39, 3, 307-322

<sup>13</sup> Jordan, R, and Jones, G (1999) Review of research into educational interventions for children with autism in the UK, *Autism: International Journal of Research and Practice*, 3, 1, 101-1

<sup>14</sup> Prizant, B.M. and Rubin, S.A. (1999) Contemporary issues in interventions for autism spectrum disorders: a commentary, *Journal of the Association for Persons with a Severe Mental Handicap*, 24, 3, 199-208

<sup>15</sup> Webster, A, Webster, V., & Feiler, A. (2002). Research evidence, polemic and evangelism: how decisions are made on early intervention in autistic spectrum disorder. *Educational and Child Psychology*, 19, 54-67.

<sup>16</sup> Gerland, G (1997) *A real person*, London: Souvenir Press

<sup>17</sup> Rogers, S. J., & Vismara, L. A. (2008). Evidence-based comprehensive treatments for early autism. *Journal of Clinical Child and Adolescent Psychology*, 37, 8-38.

<sup>18</sup> Ospina, M. B., Krebs Seida, J., Clark, B., Karkhaneh, M., Hartling, L., Tjosvold, L., Vandermeer, B., & Smith V. (2008). Behavioural and developmental interventions for autism spectrum disorder: A clinical systematic review. *PLoS One*, 3, e3755.

<sup>19</sup> Warren Z, McPheeters ML, Sathe N, Foss-Feig JH, Glasser A, Veenstra-Vanderweele J. *Pediatrics*. (2011). A systematic review of early intensive intervention for autism spectrum disorders. May;127(5):e1303-11

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<sup>20</sup> Kasari, C., Paparella, T, Freeman, S. & Jahromi, L.B. (2008). Language outcome and autism: randomized comparison of joint attention and play interventions. *Journal of Consulting and Clinical*

interventions which are thought to be effective. The key features are that they address the three areas of difference in autism; that intervention starts at an early age; that parents are involved and informed; and that most children with autism in the early years benefit from at least 15 hours of individual support per week. The key areas addressed are play, communication, social and emotional understanding and 'inappropriate' behaviours are viewed as functional and often communicative. The goal then is to teach the child functional alternatives which are acceptable and achieve the same outcome.

The approaches with the strongest research evidence include behavioural approaches and approaches that focus on enhancing social communication abilities either through parent-training or therapists working directly with children, or in some cases a combination of the two. Behavioural approaches, most commonly home-delivered therapist-led programmes of moderate to high intensity, have been shown to lead to improvements in cognitive and adaptive behaviour and in some studies improvements in language and communication abilities<sup>20,21</sup>. Social communication approaches have found improvements in early social communication skills (e.g. joint attention abilities, dyadic interaction with parents) and in some studies language abilities. There is also evidence, including from randomised controlled trials, that augmentative systems such as the Picture Exchange Communication System (PECS) can improve communicative function in non-verbal children with autism<sup>22,23</sup>.

To date, no interventions have been shown to lead to a clear reduction in autism symptoms and the focus of early intervention and education should be on improving skills and abilities, and ultimately independence and life skills.

*Psychology*, 76: 125-37.

<sup>21</sup> Green, J., Charman, T., McConachie, H., Aldred, C., Slonims, V., Howlin, P., Le Couteur, A. et al, (2010). Parent-mediated communication-focused treatment for preschool children with autism (MRC PACT); a randomised controlled trial. *The Lancet*, 375, Issue 9732, 2124 - 2125,

<sup>22</sup> Yoder, P.J. & Stone, W.L. (2006a). Randomized comparison of two communication interventions for preschoolers with autism spectrum disorders. *Journal Consulting and Clinical Psychology*, 74: 426-35.

<sup>23</sup> Yoder, P.J. & Stone, W.L. (2006b). A randomized comparison of the effect of two pre-linguistic communication interventions on the acquisition of spoken communication in preschoolers with autism spectrum disorders. *Journal of Speech and Language Hearing Research*, 49: 698-711

In addition, the insights provided in accounts of those on the autism spectrum (e.g. Gerland, 1997<sup>24</sup>; Grandin, 1995<sup>25</sup>; Lawson, 2001<sup>26</sup>; Sainsbury, 2001)<sup>27</sup> are extremely useful in helping to decide how best to address their needs. They report on the difficulties they faced at school as most were not diagnosed and were misunderstood by staff and teased and bullied by peers. They had very low self-esteem and blamed themselves for their failure. Many reported sensory overload and distortion and found some environments and stimuli aversive which severely affected their performance. Despite this, many adults did very well academically. Their biggest problems in adulthood centred around their difficulties with social understanding in the work place and in social isolation. Many still depended a great deal on their parents and other family members even in the able, verbal group (Howlin, 2003).

There are a number of difficulties for academic researchers in conducting studies to evaluate the effectiveness of a particular intervention. Some of these also apply to teaching staff wanting to find out whether a new intervention or resource has been of benefit to pupils, for example:

- Pupils on the autism spectrum are often engaged in more than one intervention. And so it is difficult to isolate the impact of a single intervention, and
- Pupils may improve for a variety of reasons unconnected with a particular intervention, e.g. maturation, parental input, other pre-school or out-of-school inputs.

In addition, there are issues around:

- the diagnosis and assessment of pupils and measuring change if teaching staff want to compare two groups of pupils – one group who has the new intervention and a second group who is taught by traditional means. Assessing pupils is often also a social activity where the pupil has to relate to the tester and some of the questions asked may be interpreted literally and lead to unexpected answers which give a low score (e.g. when a pupil was asked to describe a beach in winter, he told the teacher he had never been on a beach in winter and so could not do the task.
- how well and how faithfully an intervention is carried out with the pupils – the training and competence of staff in a school will vary and so affect results

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<sup>24</sup> Grandin, T (1995) How people with autism think, in Schopler, E. and Mesibov, G., (Eds) *Learning and cognition in autism*, New York: Plenum Press

<sup>25</sup> Lawson, W (2001) *Understanding and working with the spectrum of autism: an insider's view*, London: Jessica Kingsley

<sup>26</sup> Sainsbury, C (2000) *Martian in the playground: understanding the schoolchild with Asperger's syndrome*, Bristol: Lucky Duck Publishing

<sup>27</sup> Howlin, P (2003) *Autism: preparing for adulthood*, 2<sup>nd</sup> edition, London: Routledge

- 'therapist drift' – if an intervention does not fit the style of expertise of a teacher or parent, then they will 'drift' into a style that they do feel competent and comfortable with and so alter the intervention and its effects
- obtaining a clear description of the rationale, aims and expected outcomes of the intervention
- defining what is meant by success, and
- the relatively small population of pupils involved in studies.

There have, as yet, been relatively few attempts to evaluate interventions objectively and those who developed the intervention have often conducted the research that has been done. This leads to bias and ideally interventions need to be externally evaluated. Those who live and work with children are often engaged fully in 'hands on' work and in trying out different strategies as they appear. They may have little time to evaluate and measure outcomes or process in any systematic way, but they are increasingly being encouraged to do so to provide an evidence base for their practice. Both parents and professionals are keen to have information and research evidence on the rationale and effects of these interventions and this would be particularly helpful to service providers in making decisions about resource allocation. The senior management within schools should be encouraged to study for higher degrees which have a research component (i.e. a dissertation based on practice), so that they develop the skills to teach colleagues how best to evaluate a new intervention. There are many useful textbooks written to guide professionals working in education how to evaluate practice (see Robson, Edwards).

The key steps within a study to evaluate an intervention, whether it is a widely known intervention such as Social Stories or Circle of Friends or whether it is an intervention that the teaching staff have developed (e.g. the use of puppets to promote communication) are as follows:

1. Describe clearly the rationale and practice of the intervention and consider for whom it is most suited
2. Identify the key goals and which skills you would expect to develop in the child
3. Select a sample of children who are going to take part, based on 1 and 2 above
4. Consider what type of information you are going to need and how this might be collected and from whom and by whom?
5. The main methods of data collection include observation, interview, group discussion, analysis of reports and questionnaires. All of these need a great deal of thought and need to be tried out before the final version is produced.
6. The timescale of the study – how long is needed for an effect to be observed



**See online resource:**

[www.education.gov.uk/lamb/autism/interventions/evaluating](http://www.education.gov.uk/lamb/autism/interventions/evaluating)

Some of these processes appear straightforward but experience shows that it is hard to construct good measures of progress. It is also important to collect information on process as well as outcome. Process measures include asking the pupil and/or parents and staff what it was like to be involved in the intervention and what they would have liked to be different.

Strong research data to support a particular intervention may not exist. This is partly because the practitioners lack the necessary tools, resources and expertise to evaluate their work, but also because research in this area is problematic and studies which have been conducted have not always produced clear and conclusive findings (Jones and Jordan<sup>28</sup>; Parsons et al.<sup>29</sup>). These issues are not specific to the autism spectrum, although research involving this population does present particular challenges.

The main findings of the DfEE review (Jordan et al.<sup>30</sup>) and those of the most recent review by Parsons et al.<sup>31</sup> were that most interventions had some evidence of their effectiveness, but this was variable in quality and no approach had been entirely successful in producing a methodologically sound evaluation. You can download the full report if you go to [www.ncse.ie](http://www.ncse.ie) and follow the link to Research and then to Research Reports. Another very recent systematic review on interventions for children and young people on the autism spectrum was commissioned by the US Department for Health and Human Services and summarises in detail the approaches for which there is a stronger emerging evidence-base:

[http://www.effectivehealthcare.ahrq.gov/ehc/products/106/656/CER26\\_Autism\\_Report\\_04-14-2011.pdf](http://www.effectivehealthcare.ahrq.gov/ehc/products/106/656/CER26_Autism_Report_04-14-2011.pdf)

It is clear that conducting an evaluation of an intervention is not easy, but this should not deter you and others from such work. Rather, it is vital that such work is continued and expanded to produce stronger evidence on which to base policy and practice in relation to pupils on the autism spectrum. It is only by attempting to

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<sup>28</sup> Jones, G and Jordan, R (2008) Research base for intervention in autism, in E. McGregor, M. Nunez, K. Cebula and JC Gomez (Eds), *Autism: an integrated view from neurocognitive, clinical and intervention research*, Oxford: Blackwell

<sup>29</sup> Parsons, S., Guldborg, K., MacLeod, A., Jones, G., Prunty, A and Balfe, T (2009) *International review of the literature of evidence of best practice provision in the education of persons with autism spectrum disorders*, Dublin: NCSE

<sup>30</sup> Jordan et al<sup>30</sup> (1998) *Educational Interventions with Autism: A Literature Review of Recent and Current Research*. DfEE Research Report No. 7. HMSO.

<sup>31</sup> Parsons, S., Guldborg, K., MacLeod, A., Jones, G., Prunty, A and Balfe, T (2009) *International review of the literature of evidence of best practice provision in the education of persons with autism spectrum disorders*, Dublin: NCSE

ascertain the effects of practice that both the interventions themselves and the research methods will be developed and improved. Some approaches such as TEACCH and SCERTS offer a range of strategies based on what is known about autism and many schools in the UK are using ideas from these. They are also equally useful for pupils at all level of intellectual ability and for those with very little language, communication skills or social understanding to those pupils who are much more able in these areas. The strategies can also be used into adulthood. Both TEACCH and SCERTS are frameworks for intervention focusing on adult style and how we can accommodate and modify activities and environments to develop skills and increase the chances of success for pupils with autism.

**See online resource:**

[www.education.gov.uk/lamb/autism/interventions/data-collection](http://www.education.gov.uk/lamb/autism/interventions/data-collection)

**BRIEFING 2: THE TEACCH PROGRAMME (TREATMENT AND EDUCATION OF AUTISTIC AND RELATED COMMUNICATION HANDICAPPED CHILDREN)**

TEACCH was developed in the Department of Psychiatry at the University of North Carolina by Schopler and colleagues (Schopler et al., 1995<sup>32</sup>; Mesibov et al., 2004<sup>33</sup>; Howley & Mesibov, 2003<sup>34</sup>). The programme is a state-wide service for children and adults with autism where approaches are developed and evaluated. Its methodology is that of 'structured teaching', which claims to deal specifically with the issues experienced by people on the autism spectrum in understanding, predicting and controlling the typically arranged environment. The rationale for the approach is based on research and the purpose of ongoing research is to develop new ideas and to evaluate their effectiveness.

**Focus of TEACCH**

TEACCH does not address the autism directly, but provides what might be called a 'prosthetic environment', where the effects of their autism are minimised by creating an 'autism-friendly' environment at home, school, work and other settings which builds on their strengths. There is a detailed assessment using the PEP-R (Psycho Educational Profile), which identifies 'emerging skills' and uses these as the first teaching goals. Pupils are taught functional and vocational skills from the start and good work habits, which enable them to function semi-independently, as long as there is a structure. It is one of the most widely used approaches for children and adults on the autism spectrum in the UK. European (Flemish) versions of TEACCH

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<sup>32</sup> Schopler, E., Mesibov, G. and Hearsey, K. (1995). 'Structured Teaching in the TEACCH System' in E. Schopler and G. Mesibov (eds) *Learning and Cognition in Autism..* New York: Plenum Press

<sup>33</sup> Mesibov GB, Shea V, Schopler E (2004). *The TEACCH Approach to Autism Spectrum Disorders.* Springer

<sup>34</sup> Mesibov, G. and Howley, M. (2003). *Accessing the Curriculum for Pupils with Autistic Spectrum Disorders: Using the TEACCH Programme to Help Inclusion.* London: David Fulton

incorporate a cognitive element (Gillberg and Peeters, 1996)<sup>35</sup> and prefer to call the approach 'visually mediated instruction'. Later versions from America also involve a cognitive element, at least for the more able child. Parents are involved as equal partners in the programme throughout. Preece and Almond (2007)<sup>36</sup> have written about the use of structured teaching approaches within the home setting in the UK to support parents and children in addressing particular issues. Howley and Rose (2003)<sup>37</sup> have written about using ideas from TEACCH to support group work with children on the autism spectrum.

Mesibov (undated) says,

*By focusing on the individual we mean that the person is the priority, rather than any philosophical notion like inclusion, discrete trial training, facilitated communication, etc. We emphasise individualised assessment to understand the individual better and also the 'culture of autism', suggesting that people with autism are part of a distinctive group with common characteristics that are different, but not necessarily inferior, to the rest of us.*

(Accessed at <http://www.teacch.com/aboutus.htm>)

## **Culture of autism**

Mesibov argues that the differences between people with autism and others should be understood as cultural differences, and just as with other cultural differences, people from different cultures can always learn from each other. Although autism is a developmental disorder caused by neurological dysfunction, TEACCH believes that their ways of behaving, feeling and thinking are different and their special interests and needs, caused by the brain-differences, should be respected, valued and supported whenever people with autism are educated or taught independence and other important skills.

## **Assessment methods and the development of teaching programmes**

TEACCH has developed procedures for the assessment and the development of individualised teaching programmes for children and young people the autism spectrum. Staff working within the TEACCH approach make a detailed assessment of each individual using the Psycho-Educational Profile (PEP), recently revised<sup>38</sup> or

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<sup>35</sup> Gillberg, C. and Peeters, T. (1997) *Autism: medical and educational aspects*. Antwerp Opleigingscentrum Autisme

<sup>36</sup> Preece, D and Almond, J (2008) Supporting families on the autism spectrum: using structured teaching approaches in the home and the community, *Good Autism Practice*, 9, 2, 44-53

<sup>37</sup> Howley, M and Rose, R (2003) Facilitating group work for pupils with ASDs by combining jigsawing and structured teaching, *Good Autism Practice Journal*, 4, 1, 20-25

<sup>38</sup> Schopler, E., Lansing, M., Reichler, R., and Marcus, L.M. (2005) *Psychoeducational profile (PEP-3): TEACCH individualised psychoeducational assessment*. North Carolina, Autism Society of North Carolina

the Adolescent and Adult Psycho-Educational Profile (AAPEP), also recently revised, and re-titled TEACCH Transition Assessment Profile (TTAP)<sup>39</sup>. Each scale is divided into six functional areas, which are vocational skills; leisure skills; functional/communication; independent functioning; vocational behaviour; and interpersonal behaviour.

### **Educational goals in TEACCH**

#### **Educational goals for each student with autism are:**

- to teach the students that their environment has meaning;
- to teach the students the concept of cause and effect;
- to teach communication;
- to develop meaningful work and leisure skills for adult life.

### **Educational strategies used in TEACCH**

These include:

- presenting information visually;
- teaching the students the habit of working from top to bottom and left to right;
- teaching the students the concept of 'finished';
- teaching routines with flexibility incorporated;
- teaching in a variety of settings, with different materials.

### **Structured teaching**

The purpose of structured teaching is to reorganise the visual information surrounding a pupil and to visually and sensitively present the information which the pupil needs in order to understand what to do, when, where, how, for how long, with whom, what next and so on. Unless there is an associated visual loss, visual processing is usually a strength in individuals with autism<sup>40</sup>

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<sup>39</sup> Mesibov, G.B., Thomas, J.B., Chapman, S.M., and Schopler, E.,(2006) *TEACCH Transition Assessment Profile (TTAP)* Austin: Pro-Ed Inc

<sup>40</sup> Grandin, T 1995 *Thinking in pictures*. New York; Vintage Press Random House. (Expanded version 2006)

## **Main elements of structure in the TEACCH programme**

Those in Division TEACCH have developed ways of making tasks and activities clear to the pupil that can be classified under four different headings:

- physical structure - the way in which the environment is organised, be it the classroom, the home, the work place or leisure environment
- daily schedules or timetables - how students are shown what they are supposed to be doing and when
- work-systems, what they are doing and for how long
- visual instructions and prompts for the task itself.

Questions staff might consider when arranging the learning environment for pupils on the autism spectrum are as follows:

### **Work Areas:**

- is there space provided for individual and group work?
- are work areas located in the least distracting settings?
- are they marked so a pupil can find their own way?
- are there consistent work areas for those pupils who need them?
- does the teacher have easy visual access to all work areas?
- are there places for pupils to put finished work?
- are work materials in a centralised area and close to work areas?
- are a pupil's materials easily accessible and clearly marked for them?

### **Play and Leisure Areas:**

- are play/leisure areas as large as possible?
- are they away from exits?
- are they away from areas and materials that pupils should not have access to during free time?
- are the boundaries clear?
- can staff observe the particular area from all the other areas?

- are the shelves cluttered with toys and games that are broken or never used?
- Is the whole area clutter free?
- Is any unused equipment taking up space?

### **Daily schedule or timetable**

Visual timetables show the students:

- What work to do
- When to do it
- What to do next

There are different forms of visual timetable (e.g. object; picture; symbol; written). If the student can match objects to pictures or pictures to pictures, this pupil may use the picture schedule/timetable. If another pupil reads storybooks easily and follows verbal instruction, s/he may use the written list. If the pupil is found to have a hard time dealing with any of these in daily life settings, although s/he was able to match some of the objects to pictures during the PEP-R assessment, the teacher might decide to prepare for him/her an object reference schedule/timetable.

The simplest way to offer information about what is to happen next is to show the child a concrete item from the next activity (e.g. a cup for drink; a toilet roll for toilet). Staff may use objects, pictures, photos, numbers or words to illustrate the order of activities. Clearly in the beginning stage, a child may only understand one event at a time, but staff will build up on this, where appropriate. With a developmentally young pupil, the teacher may just have one object to demonstrate that this is a work time, for example, a book. Other objects that might be used in this way are objects which reflect the activity. For example, they may have a plate to signify lunch or food, a coat to signify outside-play and a toy to signify the end of the work session and a ball to signify that they were going to the gym. So the objects represent a part of the activity. With a more able pupil, staff may give them pictures or line drawings or photos.

### **Length of visual timetables**

Some pupils may need to start with short timetables and build up gradually before they can cope with a full daily timetable. The first timetable may just be of two activities, the second of which acts as an incentive for the first - first 'work' then 'play'.

A teacher must have a framework in order to teach pupils on the autism spectrum effectively. By removing uncertainty, staff can help them to make sense of their world. A clear and consistent timetable facilitates a smooth running classroom and

gives more time for real teaching and learning. Many pupils on the autism spectrum have problems with sequential memory and organisation of time. The pupil may have three pictures of activities on a board and when they have completed an activity may go to the board and turn that activity over and move on to the next one so that they have a visual record of where they are. With a more able pupil, it will be possible to have a full day set out in picture form. The pupil might then check off activities, as they are finished. If the pupil can read and understand words then it may be in written form. The sequence may be top to bottom or from left to right depending on what the pupil understands best. As the pupil's understanding develops one might add times alongside words, too.

In summary, a daily timetable:

- helps the pupils to know what they should be doing at a particular time
- gives direction for all periods during a day
- helps the pupil to organise and predict daily events
- lessens anxiety about not knowing what will happen next
- helps a pupil to move from one activity to the next
- lets them know where they should go next
- may motivate pupils lacking initiative to complete an unpopular task, if the schedule shows that a more enjoyable activity follows

### **Work-systems**

The TEACCH programme encourages pupils to work independently. There are four pieces of information given to the pupil in a work-system:

- How many items of work they have to do
- How long they have to work
- When it is finished
- What is next – may be a reward or a motivator

The first one on the above list might be contained in separate baskets so that each task has a basket to itself and the pupil works systematically through these. The baskets may be colour coded or have letters written on them or numbers or some other annotation which is meaningful to the pupil. The adult may actually put the baskets alongside the pupil's work-desk or if the pupil can cope, they may actually walk across the classroom and collect the basket themselves.

**See online resource:**

[www.education.gov.uk/lamb/autism/interventions/teacch](http://www.education.gov.uk/lamb/autism/interventions/teacch)

### **Visual instructions and prompts for the task itself**

In terms of giving pupils instructions, the key is to make it visual and to present predictable routines. Staff use jigs or templates in order to facilitate the child's success at particular tasks<sup>41</sup>. For example, with a construction toy, staff may actually draw a picture of the component parts in the order in which they should be put together and the pupil will be encouraged to work from left to right. So, initially, it is a matching exercise followed by a putting together exercise. Similarly, in the bathroom, a list of the activities the pupil has to do and the order in which these are done could be given in picture form or word form so that you might have 'wash face, clean teeth, brush hair' and the pupil crosses off when s/he has done each of these

Generally, if pupils on the autism spectrum **know** what they have to do they will usually do it. They seem to have a highly developed sense of order and an idea of what is right, so that if things are presented to them in a particular way, they will usually adopt that method as the correct way. They may enjoy looking at catalogues and telephone directories because they are very ordered in their presentation and they prefer doors to be closed and drawers to be closed, again because they don't like things out of place.

Further information about TEACCH can be found at the website [www.teacch.com](http://www.teacch.com).

#### **TASK 1:**

Identify some aspects of the TEACCH approach which could be of benefit to pupils on the autism spectrum in your school. What advice would you give to their teachers to help them incorporate these aspects into their classrooms?

#### **BRIEFING 3: THE SCERTS FRAMEWORK (SOCIAL COMMUNICATION; EMOTIONAL REGULATION. TRANSACTIONAL SUPPORTS)**

The SCERTS framework was developed in the USA by Barry Prizant, Amy Wetherby and Emily Rubin<sup>42</sup>. It is a multidisciplinary educational approach designed for children on the autism spectrum. It is not exclusive of other treatment approaches and methodologies, but instead provides a framework for assessing a child's

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<sup>41</sup> Schopler, E., Mesibov, G. and Hearshey, K. (1995) Structured teaching in the TEACCH approach. In: E. Schopler and G. Mesibov, G. (Eds) *Learning and cognition in autism*. New York: Plenum Press.

<sup>42</sup> Prizant, B., Wetherby, A.M., Rubin, E., Laurent, A.C. and Rydell, P. (2006) *The SCERTS Model: A comprehensive educational approach for children with Autism Spectrum Disorders*. Baltimore; Brookes Publishing



competence and designing a programme to support the development of skills. It can incorporate a wide range of different interventions and approaches (such as TEACCH; the Picture Exchange Communication System (PECS),<sup>43</sup> and Intensive Interaction<sup>44</sup>) and allows for specific goal setting that relates directly to the key areas which need to be addressed.

## **Rationale and practice**

SCERTS covers many aspects of development as its title suggests and is based on knowledge of the key challenges faced by children on the autism spectrum. Transactional support refers to the ways in which parents and staff can support the pupil to achieve success and develop skills. It is designed to help pupils progress through the key stages of becoming a competent social communicator. The key elements are modifications to the environment (e.g. at home and school), adapting staff and parent style and the use of visual supports. SCERTS suggests how these can be embedded in natural, functional and meaningful contexts.

The core domains of the SCERTS model are:

**Social Communication:** goals to help the child be a competent, confident and active participant in a social world.

To achieve this a child needs to develop competencies in two key areas: **Joint attention** and **Symbol Use**

**Emotional Regulation:** the capacity to self monitor levels of physical arousal and emotional states in terms of **Self Regulation** and **Mutual Regulation**.

**Transactional Support:** This includes the adjustments made by the communicative partner in terms of their interpersonal skills and adjustments made to the environment to foster positive learning outcomes:

**Interpersonal Support** and **Learning Support** (environmental support)<sup>45</sup>

The SCERTS model identifies three partner (the adult interacting with the pupil) stages at which a pupil may be interacting in a social world, and observational assessment and target setting is directly linked to the identified partner stage. These partner stages are:

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<sup>43</sup> Bondy, A.S., & Frost, L.A. (1994). The Picture Exchange Communication System. *Focus on Autistic Behavior*, 9, (3), 1- 19.

<sup>44</sup> Nind, M and Hewitt, D (1994), *Access to Communication; Developing the basics of communication with people with severe learning difficulties through intensive interaction*, David Fulton, London.

<sup>45</sup> O'neill, J.; Bergstrand, L.; Bowman, K.; Elliott, K.; Mavin, L.; Stephenson, S.; Wayman, C. (2010) The SCERTS Model: Implementation And Evaluation In A Primary Special School. *Good Autism Practice (Gap)*, Volume 11, Number 1, May 2010, Pp. 7-15(9)

- **Social Partner:** where a pupil is using fewer than 3 words or phrases (which may be spoken, signed, pictured, written words or other symbolic system) referentially, regularly and with communicative intent.
- **Language Partner:** where a pupil uses more than 3 words or phrases (which may be spoken, signed, pictured, written words or other symbolic system) referentially, regularly and with communicative intent.
- **Conversation Partner:** where a pupil uses at least 100 words or phrases (which may be spoken, signed, pictured, written words or other symbolic system) referentially, regularly and with communicative intent. And can use at least 20 different word combinations that are creative.

Once a pupil's partner stage has been agreed, detailed observations take place across a range of settings within school, home and the community using the SCERTS Assessment Process (SAP).

An emphasis is placed on:

- making smooth and independent transitions across natural routines at school, at home, and in the community
- gaining and maintaining active engagement in everyday activities in the classroom (e.g. maths, literacy, play, break-times) across contexts
- expressing their emotion and using coping strategies in a conventional manner.

### ***The SCERTS Assessment Process (SAP)***

This is a curriculum-based assessment designed to pinpoint those areas of development that support a child's social and communicative competence. It is an ongoing assessment process designed:

- to establish a child's profile of developmental strengths and needs
- to determine meaningful, purposeful, and motivating educational goals based on a child's profile and functional needs
- to select the most appropriate learning contexts and teaching strategies
- to determine the necessary transactional support (interpersonal support, learning support, support to families)
- to monitor progress over time

Further descriptions of the SAP can be found in the unit on Identifying the Needs of Pupils on the Autism Spectrum.

**See online resource:**

[www.education.gov.uk/lamb/autism/interventions/scerts](http://www.education.gov.uk/lamb/autism/interventions/scerts)

When the educational plan is drawn up there are targets for the child and these are linked to the behaviours and supports to be provided by the staff and parents. The development of SCERTS is influenced by the work of Vygotsky (1978)<sup>46</sup> with the need for the identification of the “*zone of proximal development*” which clarifies the emerging skills. Learning is viewed as socially mediated with an emphasis on social partners who provide appropriate scaffolding (i.e. transactional support) to enable the pupil to successfully learn and acquire skills. So having goals for the adults is as important as having goals for the pupil.

### **Evidence base for SCERTS**

No major trials have been conducted on the effectiveness of SCERTS per se, but the founders would argue that there is research evidence to support the key components of SCERTS. Recently, a large-scale project has been funded in the USA and the results of this are awaited. SCERTS has been introduced to the UK and so one or two articles are appearing in the literature where schools are reporting on its effectiveness (e.g. O’Neill et al., 2010). The paper by O’Neill evaluates the implementation of the SCERTS model with four pupils on the autism spectrum within a primary special school. The authors make the point that SCERTS encompasses many of the key principles of good practice and can be seen as a way of working with children which alters the culture of the school and adult style, rather than as a single intervention.

More details can be obtained from the website. [www.scerts.com](http://www.scerts.com).

### **BRIEFING 4: EVALUATING INTERVENTIONS**

It is useful to consider how we might understand and make sense of the different interventions being tried and developed.

Empirically based research evidence is important, but it is only one of several sources of information that a parent or practitioner might use. Traditionally, interventions have been chosen on the basis of data from a variety of sources and this makes good sense (Prizant et al.<sup>47</sup>, 1999; Jones and Jordan<sup>48</sup>). Other sources include:

- ideas from current theories, e.g. on autism, development and learning
- well-documented case studies from practice

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<sup>46</sup> Vygotsky, L. (1978) Interaction between learning and development. From: *Mind and Society* (p 79-91) Cambridge, MA., Harvard University Press

<sup>47</sup> Prizant, B. M. and Rubin, E. (1999) Contemporary issues in interventions for autistic spectrum disorders: a commentary, *Journal of the Association of Persons with Severe Handicaps*, 24: 3, pp.199-208.

<sup>48</sup> Jones, G and Jordan, R (2008) Research base for intervention in autism, in E. McGregor, M. Nunez, K. Cebula and JC Gomez (Eds), *Autism: an integrated view from neurocognitive, clinical and intervention research*, Oxford: Blackwell

- the parents' or practitioners' particular knowledge of a pupil and that pupil's response to previous approaches, and
- knowledge of the social and cultural conventions that are relevant to the child and the family

**See online resource:**

[www.education.gov.uk/lamb/autism/interventions/info-sources](http://www.education.gov.uk/lamb/autism/interventions/info-sources)

**Questions to ask about an intervention**

As our understanding of the autism spectrum grows and we learn from the accounts of adults what it is like, we can use this knowledge to inform the work that we do and so increase our chances of success.

When deciding on an intervention and how this might be used with a particular pupil, the following guidance might be helpful:

- Be aware that pupils on the autism spectrum are different from each other and so will require different approaches and services
- Be aware that the abilities of an able pupil on the autism spectrum might mask the very real difficulties they have in functioning in the world
- Be aware that a school environment is very demanding for pupils on the autism spectrum and that their levels of stress and fatigue are likely to be high
- Acknowledge that to refer to those on the autism spectrum as having a social impairment or a communication impairment is misleading, as these do not reside in the individual - a social encounter involves others and '*we hold more than half the solution*' in enabling social interaction to be effective (Gray, 2000<sup>49</sup>; Smith, 2003<sup>50</sup>)
- Think of their long term future and develop areas of interest and strength that are likely to be useful in employment, leisure and relationships
- Be aware that *we are significantly impaired in our ability to understand people on the autism spectrum - their behaviour does not occur out of the blue - their behaviour holds more logic than our own.* (Gray, 2000<sup>51</sup>)
- Be aware that waking up after safe sleep is the biggest change they will experience - with a day ahead of uncertainty, confusion and anxiety (Serruys, 2000<sup>52</sup>).

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<sup>49</sup> Gray, C (2000) From both sides now: how to teach social understanding, Paper presented at the Autism Europe Congress, Glasgow May 2000.

<sup>50</sup> Smith, C (2003) *Writing social stories*, Bicester: Speechmark

<sup>51</sup> Gray, C (2000) From both sides now: how to teach social understanding, Paper presented at the Autism Europe Congress, Glasgow May 2000

So, staff who are in position to advise their colleagues on how to best support a pupil with autism, need to assist them to make a good assessment of the needs of the pupil, which includes the pupil's views on what would help now and what his or her goals are for the future (see the unit on Identifying the needs of the Pupil in the Autism Spectrum). When particular areas of need are identified, then the range of interventions and strategies which address these need to be considered and matched to the pupil's profile in terms of their developmental age, intellectual ability and strengths and interests.

The questions that might be asked by parents and teaching staff to help their decision-making in relation to interventions are as follows:

- What is the rationale of the intervention and how does this fit with current understandings of the autism spectrum?
- To what extent does the intervention address the needs of a particular pupil on the autism spectrum in the areas of communication, social understanding, flexibility of behaviour and their sensory perception?
- What do the adults and pupil do in the intervention and how is the pupil likely to respond to this?
- What does the intervention expect to achieve in terms of outcome for the pupil, both in the short and the long term?
- What evidence is there to suggest these outcomes are achieved?
- For which pupils on the autism spectrum is the intervention most appropriate?
- What are the financial and emotional costs and training implications for the family and the staff?
- Does it match the personal style of the parents or teaching staff?
- Is it ethical or potentially harmful to the pupil and the family?

From this list of questions, it is possible to gain a 'common sense' view in the light of what is known about the autism spectrum, a particular pupil and the intervention, as to whether it is likely to be useful. In addition, it is important to conduct well-designed research studies to collect data about the actual short and long-term effects of an intervention on the pupil and his family. When you introduce a particular intervention to a pupil (e.g. TEACCH or SCERTS), it is important to collect data on the pupil before, during and after the intervention to examine its effects.

<sup>52</sup> Serruys, M. (2000) *Self protection in people with autism*. Paper presented at the Autism Europe Congress, Glasgow May 2000.

Teaching staff need information about the interventions available and should be helped to select those which meet the needs of the pupil, their inclinations and their circumstances. The implications for training and the effect of the attitudes and style of staff working with the pupil will need to be considered.

**TASK 2:**

Choose an aspect of practice in your work with pupils on the autism spectrum. Write down answers to the questions above. Consider those questions, which were difficult for you to answer and think about what you might do to obtain data on these. Then think about how you might now ask your colleagues who work with pupils with autism to do the same exercise to get a whole school view on what is known and what training needs there might be.