The SCERTS model: Implementation and evaluation in a primary special school

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Editorial comment

An increasing range of educational, communication, behavioural, sensory, and relationship-based interventions for children on the autism spectrum are being used, both in special and mainstream school settings. As yet, there is limited evidence for the efficacy of many interventions (Jordan, Jones and Murray, 1998; Francis, 2005; Autism Intervention Research Trust, 2006–2010; Parsons et al, 2009), but there is an emerging consensus on what constitutes good practice (eg NIASA, 2003; SIGN, 2007; DCSF, 2009). This paper evaluates the implementation of the SCERTS model (Prizant et al, 2003) with four pupils on the autism spectrum within a primary special school. The author, Jan O'Neill, a Senior Educational Psychologist, makes 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. An excellent analysis has been made on the effects of the introduction of SCERTS based on data on the children's progress and the views of all the professionals involved in the work.

Introduction

There has been a strong emphasis in the past few years on developing tools to monitor and track the progress that young people make across many areas of their development. P Scales, Performance Indicators for Value Added Target Setting (PIVATS) and National Curriculum data are now being widely used to monitor progress at individual, local and national levels. While more precise data on children's academic progress is now routinely collected and monitored, fewer assessment tools are available to help measure progress in relation to the development of specific skills, such as communication and social skills, and these are not usually linked to a framework for the delivery of a specific curriculum.

P Scales and PIVATS are seen as limited in their ability to adequately assess and monitor development in relation to specific social communication and behavioural skills, particularly in relation to children on the autism spectrum. IQ scores are often used as research outcome measures (Cohen, Amerine-Dickens and Smith, 2006; Smith et al,

2000; National Research Council, 2001) but there are concerns that these lack ecological validity; they do not measure:

> '… *meaningful changes within natural learning environments, do not address the core deficits in the autism spectrum and are particularly problematic for young children.'* (ASHA, 2006, p 16)

Connor (2003) identified some ways in which a young person's progress, in relation to the autism spectrum could be measured and this led us to developing a profile for children with a diagnosis. Within this profile we tried to identify those specific skills that we wanted to address in the delivery of our curriculum within a specialist primary school for young children on the autism spectrum. Access to training using the SCERTS (**S**ocial **C**ommunication, **E**motional **R**egulation and **T**ransactional **S**upport) model developed by Prizant, Wetherby, Rubin and Laurent (2003) led to us implementing a small-scale pilot within a primary special school.

Primary special school

Columbia Grange is a primary special school for children on the autism spectrum and/or learning difficulties and also the base for the local multi-agency Autism Outreach Team. It is recognised as an 'outstanding school' in its most recent Ofsted inspection in 2008 and there is a strong commitment to ongoing development with an emphasis on multi-disciplinary work within the school.

The rationale for choosing the SCERTS model was to:

• explore whether this was a meaningful framework to assess, monitor and track pupil progress for children on the autism spectrum
• set relevant targets based on consultation with families
• identify targets that address the key areas of difficulty associated with the autism spectrum
• develop reflective practice and a collegiate approach within the multi-agency team
• adopt a model that is grounded in evidence-based research

The SCERTS model

The SCERTS model is a non-exclusive framework for delivering a curriculum specifically designed to address the key areas of difficulty experienced by young children on the autism spectrum. It has a significant research basis. The SCERTS manual devotes a chapter to considering the evidence to support the view that the model is consistent with evidence-based practice (Prizant, Wetherby, Rubin, Laurent and Rydell, 2006). They acknowledge that research evidence can vary in terms of methodology and have developed a table of current research findings that support one or more domains of the SCERTS model. These research findings include randomised clinical trials, quasi-experimental group treatment designs, single case experimental designs and case-control, cross-sectional or longitudinal descriptive group research designs.

As an inclusive framework, the SCERTS model can incorporate a wide range of different interventions and approaches (eg Treatment and Education of Autistic and related Communication-handicapped Children (TEACCH, Schopler and Mesibov, 1995); Picture Exchange Communication System (PECS, Bondy and Frost, 1994); and Intensive Interaction (Nind and Hewett, 1994) and allows for specific goal setting that relates directly to the key areas of difficulty recognised in the triad of impairments.

The development of SCERTS is heavily influenced by the work of Vygotsky (1978) 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 to enable the child to successfully learn and acquire skills.

Key principles of the SCERTS model

The key principles of the model are as follows:

• Fostering spontaneous, functional communication should be viewed as the most critical educational priority for children on the autism spectrum
• Goals and activities should be developmentally appropriate and functional, relative to a child's adaptive abilities and the necessary skills for maximising enjoyment, success and independence
• Natural routines across, home, school and community environments provide the educational and treatment contexts for learning
• All behaviour is viewed as purposeful
• Social partners are viewed as much a part of the problem as part of the solution

Long-term positive outcomes for young children on the autism spectrum are seen as directly related to the development and achievement of functional social communication skills. Research suggests that early intervention that directly targets joint attention, imitation and play abilities appears to support the development of social and language skills for these children (Watson and Flippin, 2008).

The core domains of the SCERTS model focus on **S**ocial **C**ommunication, which has as its stated aim: 'helping a child to be an increasingly competent, confident and active participant in social activities' and **E**motional **R**egulation, which focuses on 'supporting a child's ability to regulate emotional arousal' (Prizant, Wetherby, Rubin, Laurent and Rydell, 2006). If a child has a weak capacity to self monitor their physical arousal and emotional state they are less likely to be able to attend to and access social interactions and learning opportunities.

The SCERTS model places equal weight on the role of **T**ransactional **S**upport in terms of the interpersonal support a social partner can give and the range of environmental supports such as visual and sensory strategies to support learning and emotional regulation.

Core domains of the SCERTS model
The core domains 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)
The SCERTS model identifies three partner stages at which a child 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:

- **Social Partner** – where a child is using fewer than three 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 child uses more than three 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 child 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 child'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).

Multi-disciplinary roles and processes
Within the multi-disciplinary team, discussions took place as to our relative roles. We were all involved in the initial process of carrying out observations to inform the assessment and target setting process, and considered it vital that this should be a shared and joint activity. Gradually, individual roles developed

with a strong commitment to regular meetings to share and support the ongoing process. The Specialist Speech and Language Therapist acted as the co-ordinator for the assessments and implementation of the SCERTS framework.

After the multi-disciplinary team training, several issues were highlighted. These included discussions around a pilot study, the identification of pupils and staff, whole-school training and translating the observational assessments into meaningful targets. The process gradually developed with a commitment from the Headteacher to explore funding to support ongoing training and protected time for staff to implement the model.

Process of implementing the SCERTS model
There were several actions to take to implement a pilot of the SCERTS model into school practice, as follows:

- Initial multi-disciplinary team joint implementation training
- Pilot agreed: four pupils; two at Social Partner stage and two at Language Partner stage
- Consultation with families
- Whole-school INSET
- Multi-disciplinary team observation, video, target/goal setting using the SCERTS manual
- Individual targets discussed and agreed with families
- Baseline and interim scores collected on SCERTS and Vineland Adaptive Behaviour Scales II assessment
- Monthly meetings
- Ongoing INSET with whole-school staff
- One-day consultation with Emily Rubin (SCERTS co-founder)
- Multi-disciplinary team visit to San Diego to review practice which is embedded in mainstream practice
- Evaluation: semi-structured interview with members of the multi-disciplinary team and reflective analysis with whole-school staff
- Analysis of assessment findings
- Setting-up of regional support group to discuss and share ways of developing the implementation of the SCERTS model

Method
Initial observations were carried out with the four identified pupils across a range of settings; involving transitions from one activity to another and in consultation with family members. Baseline

assessments were agreed within a multi-disciplinary assessment process using the SCERTS framework and the Vineland Adaptive Behavior Scales II (Sparrow, Cicchetti and Balla, 2005). Social Communication, Emotional Regulation and Transactional Support targets were agreed for the four pupils and staff and these were displayed in classroom settings. Interim assessments were carried out without reference to baseline scores after one year using the SCERTS and the Vineland Adaptive Behaviour Scales II (Sparrow, Cicchetti and Balla, 2005).

A semi-structured questionnaire was used to elicit views from members of the multi-disciplinary team and a reflective analysis activity was arranged with the whole-school staff.

Data on pupil progress

Raw score data from the baseline and interim SCERTS assessment indicated that all four pupils made progress in all four skills areas; Joint Attention, Symbol Use, Mutual and Self Regulation domains (see *Figure 1*).

Figure 1: SCERTS progress data for all pupils (after 12 months)
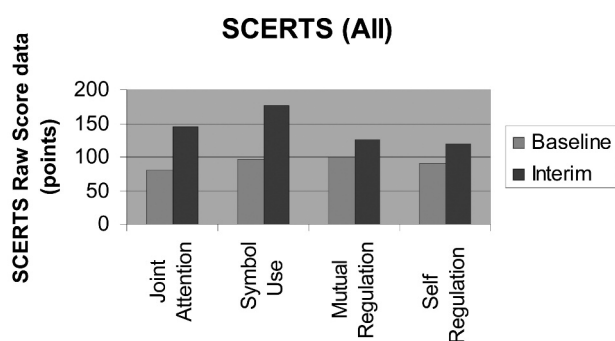
Individual pupil data from raw scores showed significant gains against all identified targets and the greatest gains against Joint Attention and Symbol Use domains (see *Figure 2*).

Similarly raw score data for individual pupils showed gains in the Communication and Socialisation domain from the Vineland Adaptive Behaviour Scales II (Sparrow, Cicchetti and Balla (2005) (see *Figure 3*).

Multi-disciplinary questionnaire

Members of the team were asked six questions relating to the pilot study. They were asked to write their responses and in addition they participated in a structured interview.

Staff understanding of autism spectrum following involvement with the pilot study

Several staff spoke about their increased understanding of the concept of emotional regulation and the importance of recognising their own roles in relation to supporting children when they were dysregulated. Specific behaviours had in the past often been viewed as 'part of autism' but everyone in the team spoke of a better understanding and a need for more open-ended reflection on the possible purposes and meaning which could be attached to the 'behaviour'.

Sensory issues were also highlighted with staff expressing a greater awareness of the benefits of a sensory curriculum. Across different disciplines such as speech and language therapy, occupational therapy and educational psychology there was a greater shared understanding, particularly with regard to the use of language used in describing needs and targets. Some of the comments made included:

'More aware that all behaviour is purposeful, has meaning. Not just their autism.'

'Think a lot more about sensory issues and regulation levels and the impact this has on a child's communication and learning.'

'More aware about need to focus on the passive children and encouraging opportunities for spontaneous communication.'

'Our behaviour affects their behaviour.'

Changes in practice

All staff were able to identify changes in their practice and for the speech and language therapist, the occupational therapist and educational psychologist this had resulted in training and liaison with professional colleagues within the local authority. They referred to the following changes:

'Greater use of visual supports, more detailed within task schedules.'

'More sensitive in giving children time and space, more child-centred approach.'

'Greater acceptance of some children's need for sensory equipment such as twiddlers, not removing these!'

'More liaison with Occupational Therapist (OT) and the Speech and Language Therapist (SALT)'

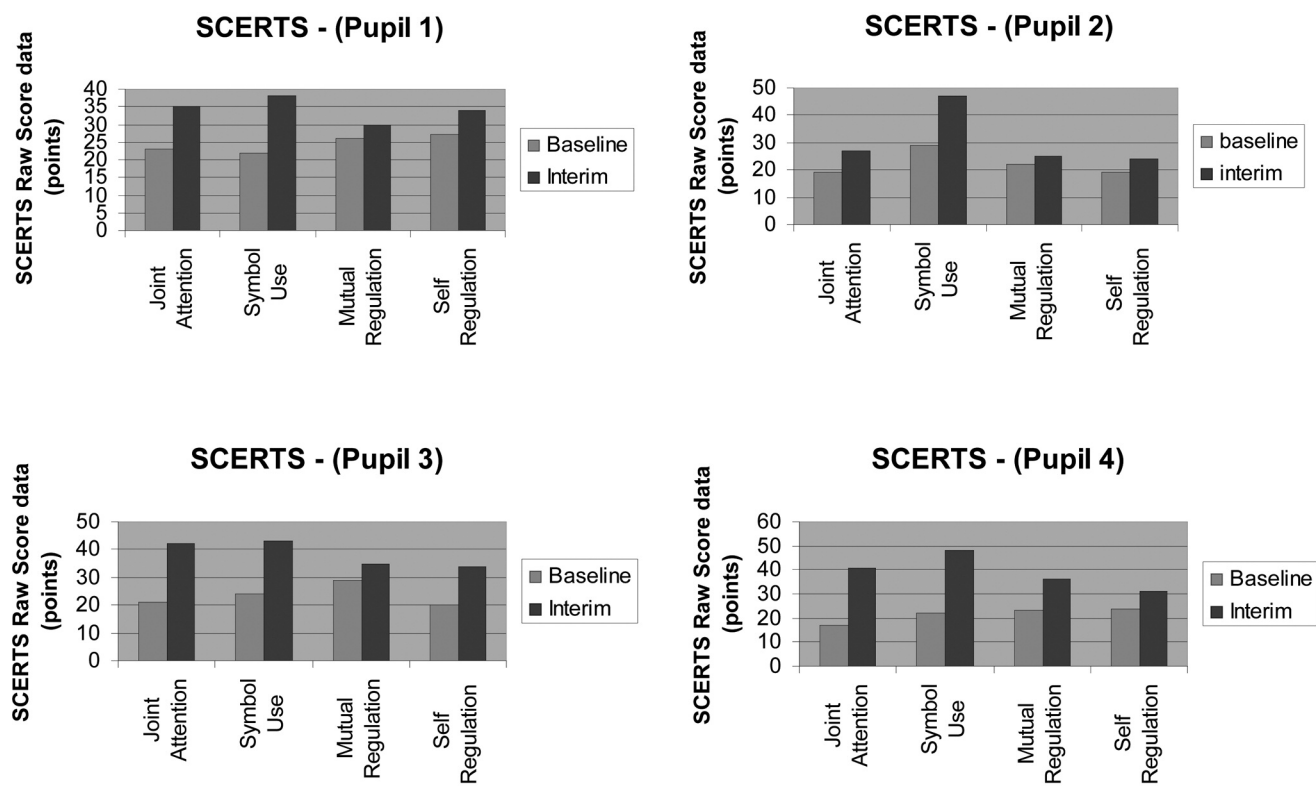**Figure 2: SCERTS progress data for individual pupils after 12 months**

SCERTS - (Pupil 1)
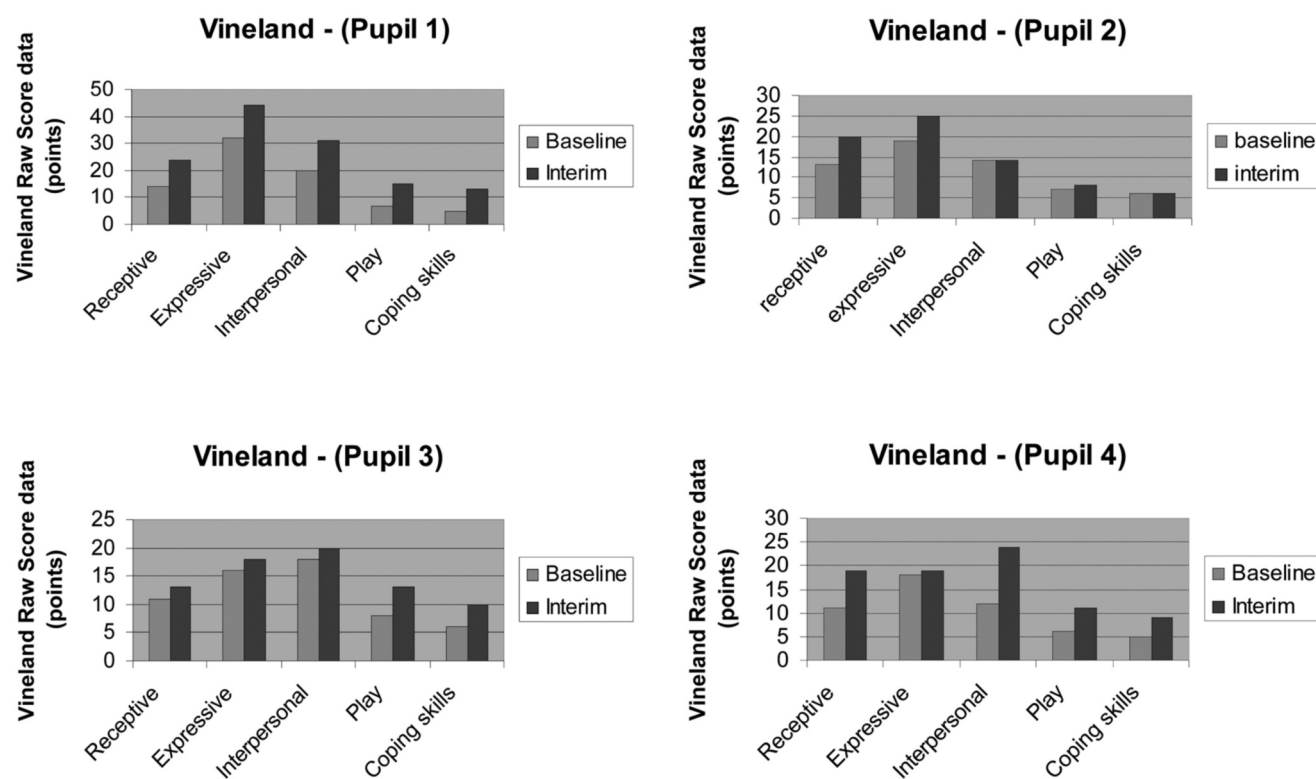

SCERTS - (Pupil 2)

SCERTS - (Pupil 3)

SCERTS - (Pupil 4)

Figure 3: Vineland II progress data for the individual pupils after 12 months

Vineland - (Pupil 1)

Vineland - (Pupil 2)

Vineland - (Pupil 3)

Vineland - (Pupil 4)

'Regular OT/sensory sessions embedded in school day, sensory activities more evident in the classroom, small trampets.'

'More developed sense of key worker with children in school and classroom setting.'

'Much more ready to acknowledge and respond to children's spontaneous bids for communi-cation.'

'More focus on transitions between activities.'

'Greater use of ICT, whiteboards, making the curriculum more meaningful.'

'More interaction opportunities built in for children during learning activities.'

'Better monitoring of classroom practice.'

'Less anxiety about allowing for interruptions in curriculum delivery.'

Issues identified in using SCERTS

Several staff spoke about time constraints and the need for a team approach in terms of implementing the pilot. They had to learn how to observe and do the assessments; needed protected time; and felt the model needed to be whole-school and cascaded to staff. One said it involved a mind shift in thinking about behaviour and the autism spectrum and another said it raised their awareness of shortcomings in the curriculum.

Development and use of additional resources

Everyone involved spoke about an increased use of resources and in many instances personalised resources had been created. Many of these were then being shared across settings. One made more use of visual and concrete supports for teaching using toys and puppets; another used emotional key rings giving examples of choices; and staff commented on their own emotional states and used differentiated visual timetables more.

Links to existing practice

The adoption of the SCERTS model was seen as a significant part of the ongoing process within school to adopt a reflective analysis approach to continued development. The school culture encourages a reflective and exploratory view of teaching and learning and there has been an increased emphasis on the role of occupational therapy within school. Speech, language and communication tasks are now embedded within the school day, and not seen as

separate, withdrawal work with the speech and language therapist. There has also been a development of teams within school for specific tasks, and less reliance on hierarchical model of management within school systems. The approach to behaviour management has also changed.

Next steps

Work to be done in the future includes making SCERTS part of whole-school practice, using the SCERTS model to enhance work on transitions between classes and between phases of education, creating greater links with parents and developing the use of SCERTS at the Conversational Partner stage. It is also planned to liaise with other settings in the region, to share practice and develop consensus for codings on observations and assessments and to develop a more meaningful curriculum for the children.

Comments from staff on the impact of SCERTS

Protected time was given within school to provide regular twilight sessions with all school staff. At the end of the academic year a session was planned to encourage a process of reflective analysis. Staff were asked to respond to three questions and to share examples of their practice in the classroom. Strategies which worked well were:

- allowing children to emotionally regulate them-selves (eg colouring/doodling for older pupils)
- children using adult's photos to get their attention
- OT and sensory integration
- self regulation when overload occurred in class
- within-task schedules for more verbal children
- sensory integration. Greater use of visual props/resources during teaching activities
- use of OT room when needed
- more symbols being available
- children allowed to move around the classroom more

At a whole-school level, the changes in practice seen were:

- more appropriate expectations of children (eg allowing them to sit at back in assembly)
- staff accepting autistic behaviours
- children now able to sit longer with a desired objects
- change in teaching styles
- staff more patient and waiting. Listening to child's requests or forms of communication more

- children accessing different areas in school (eg library, quiet area)
- use of toys/twiddles
- classes seem to be trying to meet the individual needs of children more
- children generally happier in school – much fewer episodes of children severely dysregulated
- greater use of visual supports – photos and relevant timetables

Changes observed in the pupils

The pupils seem to be calmer and more focused on tasks and more ready to learn. They appear more aware of their own needs and using regulations as and when required. Some are seeking out adults to request more and there is more communication from children who are non-verbal. Some children were picking up on their own and others' emotions more and better able to self regulate.

Concluding comments

The core domains of the SCERTS model can be viewed as supporting some of the key principles in educating children on the autism spectrum recommended by documents such as the National Research Council (2001) – that is, on social functioning, peer relationships, spontaneous communication and language, and the acquisition of competence in natural contexts (eg classroom, home). Using the SCERTS model has resulted in a greater awareness of the need to honour pupil's spontaneous bids for interaction.

The prevalence of anxiety and behavioural difficulties including self injurious behaviour is well documented in the literature on the autism spectrum (Cox and Schopler, 1993; Kim et al, 2000; Gillot, Furniss and Walter, 2001; Tantam, 2000; Matson and Nebel Schwalm, 2007) and the impact on families and carers can be significant. Targets within the Emotional Regulation domain which focus on self and mutual regulation seek to address difficulties in coping with dysregulated behaviour both from a carer's perspective and also in terms of helping the young person develop their own personal coping strategies. It can be argued that the development of successful regulatory strategies will impact positively on an individual's long-term mental health and emotional wellbeing. Use of successful regulatory strategies also enable a young person to access learning opportunities more effectively.

The Transactional Support domain emphasises the role we play as mediators and provides a potentially non threatening way to help teachers, support staff and everyone working with a young person on the autism spectrum to reflect on the best ways of providing effective scaffolding. The role of the learning environment and quality of social interactions are seen as key in social learning theory and instructional scaffolding (Vygotsky, 1978; Wood, Bruner and Ross, 1976) and this theoretical work has influenced the development of the Transactional Support domain. Flynn (2005) discusses the role of Vygotsky's learning theories in relation to autism and proposes a situated dynamic assessment model. The advantages that he states in using such a model bear strong comparisons with the SCERTS model.

Reflective practice at both a personal and systems level is seen as key to professional development (Schon, 1983; Kolb, 1984) but there are often significant constraints within school systems in providing regular and meaningful opportunities for staff to engage in this practice. Implementation of the SCERTS model has provided a framework for encouraging reflective analysis and practice within a school setting. The use of video clips of children for the SCERTS assessment process has provided a relatively non-threatening means of engaging professionals in reflective enquiry as to their own roles as mediators. In general this has been very positive with the whole-school now participating in video analysis.

The use of the SCERTS model has actively encouraged the development of positive multi-agency working within the school. Access to implementation training as a team was important in enabling team members to support each other through the early days. The development of a shared vocabulary and an increased understanding of each other's roles was supported through involvement in the pilot. It has also supported collaborative and non-hierarchical ways of working with roles and responsibilities evolving as the process developed. SCERTS also provided a vocabulary for shared and jointly owned targets which had not existed prior to the pilot.

Liaison with families and carers has been seen as a strength in school and recognised as such in the recent Ofsted report. However, involvement in the pilot has highlighted our sometimes limited perspective about a child's experiences beyond the school day. It has helped strengthen relationships and is recognised as an area for further development.

SCERTS has enabled us to collect more specific data about pupil progress in relation to specific skill areas

which relate to social difficulties seen in autism. This is now incorporated within our annual review information and is replacing the use of PIVATS in relation to the personal and social development skills.

Some initial concerns about the use of the SCERTS model focused on how well it would complement existing practice. Within Columbia Grange school a range of approaches, strategies and interventions are used to support the learning environment and there were some concerns as to whether SCERTS was just another approach. As a framework the SCERTS model aims to support the inclusion of specific targets into all areas of the curriculum and is not dependent upon specific activities or approaches. In practice, targets were initially agreed at specific points in the day but there is evidence that staff are now more aware of referencing these targets throughout the day.

Reflection on the use of the SCERTS model has encouraged us to think about our school curriculum and to question how meaningful it is to our pupils. Adoption of literacy and numeracy strategies has not always translated into the most meaningful activities. Discussions have taken place about literacy activities in school and there is a commitment to creating personal books based on real experiences with greater use of visual symbols to support learning.

In conclusion the SCERTS model has allowed us to focus in detail on individual pupils, to explore their strengths, to identify emerging skills, and to liaise and collaborate more meaningfully with their families and carers. As a framework it is both child-centred but also system-sensitive. Meaningful targets can be introduced and embedded in all aspects of the curriculum and early concerns that it might mean wholesale changes to the curriculum have not materialised. Its use has encouraged ongoing reflective practice and has contributed to whole-school development.

Our future developments include the gradual inclusion of all pupils on the SCERTS model with increased liaison with families and carers. Use of the model is also extending to our special secondary school and we are participating in a regional SCERTS interest group.

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