

AUTISM AND LEARNING

A GUIDE TO GOOD PRACTICE

Edited by Stuart Powell and Rita Jordan

Routledge Education Classic Editions



ROUTLEDGE



Autism and Learning

A guide to good practice

Classic Edition

Edited by Stuart Powell and
Rita Jordan



First published 1997
by David Fulton Publishers

This edition published 2012
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

Simultaneously published in the USA and Canada
by Routledge
711 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

© 1997, 2012 Selection and editorial material, Stuart Powell and Rita Jordan; individual chapters, the contributors

The right of the editor to be identified as the author of the editorial material, and of the authors for their individual chapters, has been asserted in accordance with sections 77 and 78 of the Copyright, Designs and Patents Act 1988.

All rights reserved. No part of this book may be reprinted or reproduced or utilised in any form or by any electronic, mechanical, or other means, now known or hereafter invented, including photocopying and recording, or in any information storage or retrieval system, without permission in writing from the publishers.

Trademark notice: Product or corporate names may be trademarks or registered trademarks, and are used only for identification and explanation without intent to infringe.

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

Library of Congress Cataloging in Publication Data

Autism and learning : a guide to good practice / edited by Stuart Powell and Rita Jordan.—Special ed.

p. cm.—(Routledge education classic edition series)

Includes bibliographical references and index.

ISBN 978-0-415-68748-5 (hardback)—ISBN 978-0-415-68749-2 (pbk.) —

ISBN 978-0-203-60613-1 (ebook) I. Autistic children—Education—Great Britain. 2. Learning. 3. Autism—Great Britain. I. Powell, Stuart. II. Jordan, Rita.

LC4719.G7A98 2012

371.94—dc23

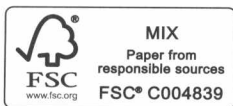
2011027168

ISBN: 978-0-415-68748-5 (hbk)

ISBN: 978-0-415-68749-2 (pbk)

ISBN: 978-0-203-60613-1 (ebk)

Typeset in Times New Roman
by RefineCatch Limited, Bungay, Suffolk



Printed and bound in Great Britain by
TJ International Ltd, Padstow, Cornwall

List of contributors

Dr Stuart Powell is Reader in Educational Psychology at the University of Hertfordshire.

Rita Jordan is Senior Lecturer in Autism at the University of Birmingham.

Gina Davies is a Speech and Language Therapist based at the ‘Little Group’, Epsom.

Geoff Evans is Northern Regional Training Officer for the National Autistic Society, and is based at Storm House School, Rotherham.

Margaret M. Golding is Teaching Fellow at the University of Hertfordshire and was until recently Headteacher of Linden Bridge School, Surrey.

Sarah Libby is Research Fellow at the University of Kent at Canterbury and the Centre for Social and Communication Disorders, Bromley.

Stephanie Lord is Headteacher of Heathermount School, Ascot, Berkshire.

Pam Maddock is Principal of Wargrave House School, Newton-le-Willows, Merseyside.

Dr Dinah K.C. Murray is a researcher living and working in London (42 Cheverton Road, London N19 3AZ).

The chapter on Assessment was written by staff at the Helen Allison School (National Autistic Society), Kent and compiled by **Malcolm W. Taylor** (Head of the Post-16 Unit).

Preface

Professor Rita Jordan PhD OBE

I was honoured, but also anxious, to learn that this book had been selected for a special edition of texts in special needs that had stood the test of time. So much has happened in the world of autism in the fourteen years since its first publication that I wondered whether the content would still have relevance to a new cohort of practitioners and parents. Yet, when I re-read the chapters, I saw the advantages of Stuart Powell's and my insistence that what were needed were principles of good practice, not recipes. Of course it is important that readers can derive practical implications from those principles but that can be supported by detailed examples, as in this book. Some of the authors of these chapters have retired now, or moved on to new challenges, but I am confident that their examples remain as an inspiration to their successors and to new readers who encounter them for the first time.

Nevertheless, it is also time to reflect on the current status of the key message of this book: Certainly, if we were to edit such a book now, we would probably have looked for more mainstream illustrations of good practice. That does not mean that the examples given can only be applied within specialised segregated settings, even though many arise in such settings, since I believe that 'specialised' autism practice implies knowledgeable staff and adequate resources, and those can be found in many different settings, including mainstream ones (Jordan, 2005). The key message, then, is that good practice in autism depends mainly, if not solely, on understanding autism and a willingness and ability to take the perspective of the individual learner. That remains as true today as ever, as the reasons for poor experience of 'inclusion' attests (Jones et al., 2008).

We certainly know more about the biological bases for autism than we did fourteen years ago, but none of this contradicts the messages in the book. Apropos diagnoses, we were somewhat ahead of our time in claiming no justification in practice for sub-types such as Asperger syndrome as is now being recognized in DSM-V (Lopez-Duran, 2010) and the move towards a dimensional rather than categorical approach to diagnosis also fits well with our distinction between a medical and educational 'diagnosis'. Our current state of knowledge may make it easier to understand some of the differences that appear in autistic development but that just provides more evidence for the importance of using up-to-date knowledge

of autism and of the individual, to help access the empathy that underlies effective practice. There have also been great advances in hearing the voices of those within the autism spectrum but we still need to study the individual, especially when it comes to those with additional difficulties in intellectual and communicative functioning.

The fourteen years have also seen the emergence of new approaches and programmes and a greater emphasis on ‘evidence based practice’. There are problems with the interpretation of this term (Jordan, 2011) but in any case no single methodology or approach has been found to be more successful for all individuals on the spectrum than any other. Whatever studies have been undertaken, it has always been the case that some children do well and others do not. Some factors that are likely to contribute to success have been identified but it remains true that programmes should be based on a rationale that takes account of what we know of autism and assessed knowledge of the individual, and then applies that in a spirit of reflective investigation (Jones & Jordan, 2008), as is proposed in this book.

In looking at the curriculum content of the book, there are obvious omissions, but the scope and variety enable the case to be made for the viability of the pedagogic principles being advanced. Some curriculum areas will have advanced and changed more than others (the use of IT for example see Murray & Aspinal, 2006) but the principles underlying the curriculum choices and the pedagogy remain. If anything, the crowding of the curriculum has made it even more essential that practitioners learn to reflect on the principles underlying their own work. The book focuses on work in the UK, which was a needed counterpoint to the American-dominated literature at the time, and also reflected our own experience. I now see a far more international approach developing but still believe that the practice represented here is more particular to the UK, and perhaps deserves wider acknowledgement.

The cognitive approach advocated in this book was rather a novelty fourteen years ago but now is far more common in early years education (e.g. SCERTS: Prizant et al., 2003), managing behaviour (e.g. CBT: Attwood, 2004a and b) and in kinds of therapeutic self-regulation programmes (Mackenzie, 2010). I hope the messages in this book will continue to influence good practice and to make sure that the essential principles of good autism practice remain.

These are:

- recognition of a distinctive autistic style of learning
- respect for the individual, not as a broad moral precept, but based on careful analysis of how s/he thinks and interprets the world
- accommodation to the individual’s strengths as well as weaknesses
- the need for self-reflection in practitioners
- mutuality in engagement in learning seen as the most productive state for teaching and learning
- high expectations of all learners but with appropriate levels of focused support

- ordinary ‘good practice’ may not be sufficient for those on the autism spectrum but ‘good autism practice’ will benefit others as well as those with autism
- individuals with autism need to learn what for others is ‘picked up’ intuitively; they cannot afford to waste time on inefficient education or being excluded because they do not ‘fit in’.

References

- Attwood, T. (2004a) *Exploring Feelings: Cognitive Behaviour Therapy to Manage Anger* Texas, Future Horizons.
- Attwood, T. (2004b) *Exploring Feelings: Cognitive Behaviour Therapy to Manage Anxiety* Texas, Future Horizons.
- Jones, G., English, A., Guldberg, K., Jordan, R., Richardson, P. & Waltz, M. (2008) *Educational Provision for Children & Young People on the Autism Spectrum, Living in England* London, Autism Educational Trust.
- Jones, G. & Jordan, R. (2008) Research Base for Interventions in Autism Spectrum Disorders In E. McGregor, M. Núñez, K. Williams & J. Gómez (Eds) *An Integrated View of Autism* Oxford, Oxford University Press pp. 281–302.
- Jordan, R.R. (2005) Managing autism and Asperger’s syndrome in current educational provision *Paediatric Rehabilitation*, **8**, 104–112.
- Jordan, R. (2011) Special Education In G. O’Brien & M. Bax (Eds) *Evidence-based Therapy in Childhood Neurodisability* London, McKeith Press.
- Lopez-Duran, N. (2010) Autism and Asperger’s in the DSM-V: thoughts on clinical utility *Child Psychology Research Blog* URL: www.child-psych.org/2010/02/autism-and-aspergers-in-the-dsm-v-going-beyond.
- Mackenzie, H. (2010) *The Autistic Child’s Guide to How to Behave* Winnipeg, Wired Fox Publications.
- Murray, D. & Aspinall, A. (2006) *Getting IT: Using Information Technology to Empower People with Communication Difficulties* London, Jessica Kingsley.
- Prizant, B.M., Wetherby, A.M, Rubin, E. & Laurent, A.C. (2003) The SCERTS model; A Transactional, Family-Centred Approach to Enhancing Communication & Socioemotional Abilities of Children with Autism Spectrum Disorders *Infants and Young Children*, **16**, **4**, 296–316.

Contents

<i>List of contributors</i>	vii
<i>Preface</i>	viii
1 Rationale for the approach	1
STUART POWELL AND RITA JORDAN	
2 Translating theory into practice	13
RITA JORDAN AND STUART POWELL	
3 Developing and using play in the curriculum	25
RITA JORDAN AND SARAH LIBBY	
4 Beyond compliance: the importance of group work in the education of children and young people with autism	40
MARGARET M. GOLDING	
5 The teaching of science	54
PAM MADDOCK	
6 Dance and drama	70
STEPHANIE LORD	
7 Autism and information technology: therapy with computers	88
DINAH K.C. MURRAY	
8 Assessment	104
STAFF AT THE HELEN ALLISON SCHOOL (NAS)	
COMPILED BY MALCOLM W. TAYLOR	

9	Communication	119
	GINA DAVIES	
10	The development of the outdoor education programme at Storm House School	134
	GEOFF EVANS	
	<i>Index</i>	151

Rationale for the approach

Stuart Powell and Rita Jordan

Some basic premises

This book does not set out to explain autism; we would refer the reader to other texts for that explanation. What we aim to do is to pinpoint some key features in our understanding and interpretation of the condition, that we feel underpin examples of good practice. At the root of our beliefs about the education of those with autism is the notion that we need to respect the way in which those individuals think and learn. By ‘respect’ we mean more than the acknowledgement of a right to the kind of respect that is necessary in any human relationship if it is to be truly of the *human* kind. We use the term here to include a notion of recognition at a psychological level that the world is as it seems to the individual with autism *for him/her*. We think this holds true in as much as the way in which the child perceives and reacts to the social and physical worlds in which they live represents a reality for him/her. We may not be able to share autistic ways of understanding but that is our problem as teachers and our starting point for any move towards real learning on the part of our students. There is a natural tension (which professionals need to resolve) between, on the one hand, respecting the individual’s autism and so working within its constraints, and, on the other hand, trying to enable individuals with autism to work effectively and live productively within the non-autistic world by improving the effectiveness of their thinking and learning.

Having described our intention to report in this book examples of good practice it is important to note here that we do not expect such examples to be flawless. We know that teaching individuals with autism is difficult and that the best laid plans may not prove fruitful. What we would wish is that the difficulties should be recognised and ways of dealing with them considered. In short, what we offer in this book are descriptions of how teaching and learning in autism develops rather than a recital of the ‘way it should be done’. We do not want, therefore, to be seen to say, ‘Do this and all will be well’, but rather to show how to make sense of what the child with autism does and how to build a teaching approach based on this understanding.

What is needed is both a recognition of the real nature of the problem in autism and knowledge of the individual to determine how that ‘problem’ has affected

development in that particular case. Teachers who are not experienced in autism may find it difficult to recognise, let alone teach, the ‘achievements’ that are part of normal spontaneous processes of learning, since the learning is so early, and so implicit. When working with children with autism, however, such achievements cannot be assumed; they will need to be explicated. What is required then is a truly reflective model of teaching – one in which the teacher engages in a process of reflection on their own learning and reactions as part of their analysis of how the learning situation is for the child with autism and subsequently what they need to do to make that situation more effective for the learner. The danger with a recipe approach to teaching (which we note above that we are seeking to avoid) is that teachers will begin at the second level of this reflection (that is what needs to be done to the situation). In our view the first level (that is, reflection on own learning and how it is for their student) is of primary importance.

We need to recognise, as indicated below, that for many children with autism, especially those with additional learning difficulties, even direct and explicit teaching may not enable them to attain a significant level of understanding. In the chapters of this book, therefore, we have asked contributors to include in their descriptions of practical approaches, the kinds of compensatory strategies that can be taught and which may enable the student to develop intellectually in spite of problems and thereby to gain access to new learning and new ways of behaving. But this leads to another important premise: we should be wary of assuming failure and having low expectations. We would not deny the difficult challenge that autism represents for education nor would we want to claim that we have a ‘cure’ or even that following the examples given will automatically lead to success. We have had sufficient failures in our own teaching to recognise such claims as false or at least naive. Nevertheless, we have also witnessed remarkable achievements in young people with autism and it is unjust to their efforts and those of their teachers to deny their success or always to claim that ‘they couldn’t have been that autistic in the first place’. We think that good teaching can make a difference and high expectations (as long as they accept the child’s difficulties) are as important in the education of those with autism as for any other group. We cannot always know why one child succeeds and another does not, and we know the difference in outcome is not always because of the way they were taught. Yet we do believe that an optimistic and determined approach, based on sound principles, can make a difference.

An educational ‘diagnosis’

It is important to recognise that autism is a developmental disorder and so any initial or fundamental disability will not just have an effect on development equivalent to difficulties resulting from that disability. A blind child does not develop in a way that equals ‘normal development minus sight’. Rather, every aspect of development is affected by the switch from visual to other forms of obtaining and processing information; there will be strengths (at least in a relative sense) as well

as weaknesses in a congenitally blind child's thinking and learning. Exactly the same will be true of autism so that even if we can identify (or agree) the fundamental disability in autism, the results will not just be in terms of deficits but rather in a different way of thinking and learning – an 'autistic' way.

We also need to remember that autism does not often occur in a 'pure' form; many individuals with autism will have additional difficulties, most commonly, additional general and/or specific learning difficulties. These additional difficulties will in turn constrain the kind of development that takes place and the teaching approaches that can be adopted. We do not distinguish various sub-sets of the autistic spectrum (such as Asperger's Syndrome) in our analyses, partly because we are not convinced of the validity of these sub-divisions as separate syndromes, but also because it confuses medical diagnosis with diagnosis for education. Whether or not there are good medical and scientific grounds for separating different syndromes within the autistic spectrum, we hold the position that it is the commonality of disturbance through the entire spectrum – the triad of impairments (Wing, 1988) that makes autism an important diagnosis educationally. It is the psychological reason for the co-occurrence of that pattern of diagnostic features that makes it autism and that makes for a characteristic unique learning style.

Of course, we do not mean to deny that differences in general cognitive ability and in the degree of language ability will have enormous implications for the development of the child. However, these differences need to be accounted for in one's consideration of the individual aspects of each child's development, rather than in considering the implications of their autism. The chapters in this book, then, do not necessarily specify a particular 'autistic population' to which they refer. In most cases, the children dealt with will cover the spectrum of ability and, where particular approaches are most suited to a particular general or language ability level, this will be indicated.

Propositions underlying our understanding of autism

In this section we formulate a conceptual framework which is intended to be in the first place explanatory of autism and in the second indicative of possible effective educational approaches. We will suggest that there are four key interconnected features of autistic thinking: firstly the way in which information is perceived, secondly the way in which the world is experienced, thirdly the way in which information is coded, stored and retrieved in memory, and finally the role of emotion as a context in which those processes may or may not operate. It is neither possible nor appropriate to give the full research and theoretical base of our position here; we state our position, not to argue for it as fact, but to enable the reader to grasp the rationale for our approach. It is interesting that many of our principles might derive from other understandings of autism, and it is not necessary for the reader to subscribe fully to our understanding of autism to find value in the practical approaches given in this book.

Perception

It is clear from the writings of many high functioning individuals with autism that stimuli from the environment are not perceived in the same way as is the case for the majority of non-autistic individuals. Accepting that everyone, in one sense, perceives things in their own way and that there will be individual differences across a range of kinds of stimuli, it is clear that the degree of commonality that is found in the non-autistic population is not present in the autistic. What is initially striking is that across the range of the five senses there is not the regularity of perception in individuals with autism that typifies the non-autistic way of perceiving. Some of this may result from abnormalities in interpreting sensory information and some from the failure of socialisation to provide a specific social and cultural meaning for what is perceived. Often it is difficult to distinguish the two. If the child with autism is unable to selectively attend to verbal instructions in the classroom, is that because the auditory signal fades in and out and is thus inherently difficult to attend to (as some able people with autism have claimed) or is it because verbal information has no special social or cultural significance and so it is no more salient than the sound of a distant fan or the feel of the clothes on the skin? If speech is not meaningful, then the child will not be practised at paying attention to it in preference to what we would normally classify as 'background' stimulation.

So, to the child with autism, particular sounds and the feel of materials, for example, may shift over time in terms of the intensity with which they are perceived. That is true for us all, but for the majority there is more conscious directing of our attention, and social stimuli (such as the teacher's instructions) are usually more salient unless other stimuli are insistent (a pain, for example), persistent (the increasing uncomfortableness of a hard chair as we sit through a long lecture) or charged with emotional impact (fear from a phobic reaction to a spider we have just seen). All these factors are also important in the direction of attention in autism, but people with autism appear to have more difficulty in perceiving in uniform ways, and in attaching social or personal meaning to what they see (or hear; the evidence for the proximal senses is unclear). Regularity is one of the necessary features of learning. The child in the cot learns about the world precisely because things happen with regularity (when they cry someone comes and makes particular kinds of response); it is this regularity that enables them to begin to make predictions – if I cry then someone will come. Certainly, the example we have given may be a primitive non-cognitive behaviour, but it is one which is built upon to form early learning. And, again, the essential building block is regularity and hence predictability. If the child with autism has difficulty perceiving the regularities 'out there' in the world or in sharing a view of the world where these patterns are literally pointed out and given meaning, then it is not surprising if they seek to impose regularity and predictability by the stereotyped ordering of their world.

So, if a regular sense of perception that is commonly shared with others is so central to learning, it becomes clear that in autism that process of learning will be impaired. The question arises, as we have indicated, as to whether perceptual irregularities in autism create conceptual problems or whether in fact it is conceptual problems in the first place that have created the perceptual irregularities. Clearly, the relationship between concept and percept is a transactional one; both develop through an interaction with the other. If you have no conception of the meaning of *hammer* then the object lying on the table remains just that and this 'object' can only be described in terms of what is conceptually available to the individual (perhaps for example: 'a piece of wood with a piece of metal stuck across the top'). On the other hand if you cannot achieve a constant image of the object which can be shared with others and thus established as the tool we know as *hammer* then it will be difficult to develop a conceptual understanding.

This becomes even more problematic when considering concepts of the self and other. As Hobson (1993) has argued, infants have to have some idea that they belong to the same kind of class as others (that is, that they are all persons) before they can start attributing emotions, thoughts, intentions, to others, on the basis of analogy with their own. Is it the cognitive capacity to make the analogy that is missing in autism (as some theorists claim) or is it the initial intuitive perception of a person that would make the analogy possible? All of this is important because it underlies the nature of the difficulty in autism.

Our own view is that there is an inbuilt disturbance in perception (which we will elaborate further below) which means that the world is somehow seen objectively, in a way that is not only devoid of social meaning but also of emotional directedness. This means that the physical properties of objects may be more salient than their functional, emotional or social significance. At the extreme, objects would only be responded to according to their ability to attract attention (through such primitive features as brightness, proximity and movement), and a sense of purposeful action, of agency, would be slow to develop. In time, for all but those with the most severe additional learning difficulties, patterns would emerge and there would be directed search for objects to fulfil repetitive actions, looking for the piece of fluff to twiddle, the angles and shadows made as fingers are held against a stream of light, the simple effect of turning a light on and off. The more able will begin to see patterns in people's behaviour and to work out cause and effect relations, but social and emotional stimuli may never give rise to intuitive insights into another (or even into themselves). They will not, then, directly perceive someone's joy or despair, although they can come to 'work out' how certain facial expressions and behaviours are associated with certain given labels such as 'sad' or 'happy', and they may even, with skilled teaching, come to recognise and respond to their own emotions and learn to apply these concepts to others. To paraphrase a very able young man with autism: 'If only someone had told me what my emotions *were*, instead of always trying to get me to control or express them!' (Sinclair, 1992).

Experiencing the world

There is a sense in which one can both experience the world and know that one has experienced it. This latter level (the level of conscious awareness) is essential if learning is to be transferable and eventually generalisable. The learner needs to be aware of having learnt something to be able to use that knowledge flexibly in future problem solving situations. In autism, however, there seems to be a difficulty in respect of the way in which the world is experienced.

As indicated above, certainly individuals with autism experience the world, indeed they may present as experiencing acutely what is happening in terms of particular sounds, sights and so on. But there is a quality to that experiencing which suggests that while they are aware at one level that things are happening they are not aware that those things are happening *to them*. A range of phenomena in autistic thinking and behaving (e.g. difficulties in agency, use of pronouns, remembering personal episodes) suggest that the relationship between *self* and *experience* is unique in autism. We have described elsewhere in some detail (Jordan and Powell, 1995) the role of the *experiencing self* in autism. Here it may suffice to note that what is important for the educator is an understanding that any learning experience is precisely that: an experience which the learner has and which may or may not correlate with what is presented or organised by the teacher. In short, what is delivered by the teacher is not always what is received by the pupil.

In autism then, children may perform tasks satisfactorily but they may do so in a way which remains detached from any sense of self. They may do things but not be aware at a meta level that they are doing them; they may be able to act but not reflect upon that action in such a way as to make it into a meaningful learning experience. In this way autistic learning remains at the level of the particular. Able adults with autism describe very clearly this sense of things happening as if they were witnessing a video of life, rather than being actively involved in it. The memory of those events, therefore, will not have this personal element (as will be detailed below) and all learning will become habitual and rote, being cued by the environment, by the teacher, or by the action that comes before. Rituals and routines, are not just a way of creating regularity in an otherwise confusing perceptual world, they are also ways of re-activating memory sequences and cueing their own learning.

Clearly, there are implications for the educator in all of this. First teachers need to recognise this fundamental feature of autistic thinking and try to offer alternative structures that will fulfil the functions that spontaneous reflection performs in non-autistic learning. That is, they can draw the child's attention to the salient features of a task and, more importantly, to the way in which the child him/herself is going about it. They can build in time, in every learning session, for reflection on what *the child* has experienced and learnt and how that learning relates to past learning and to future planned experiences. Second they need to use emotionally salient experiences as contexts for learning. Children with autism need to be made

aware of how they are feeling about what they are doing when they are engaged in learning situations and we need to capitalise on their natural interests and involvement, rather than expect them to ‘tune in’ to ours. We suggest that it is the evaluative appraisal of new learning that is missing in autism and therefore that appraisal has to be made explicit so it can become the focus of any planned learning experience.

Memory

As indicated above, a difficulty in experiencing events as personally relevant, will lead to individuals with autism being able to perform rote memory tasks satisfactorily (and sometimes extremely well) but having difficulty in remembering what they have done (without cueing), even a short while previously. For example, a boy with autism could remember considerable detail about the route taken by a particular visitor to the school, even though it was a year since her last visit, but was unable to report what he himself had been doing during the morning, when the visitor asked an open question. In this example, rote memory (aided by the child’s interest in routes) is triggered by the ‘prompt’ of the appearance of the visitor and there is no need for any spontaneous searching of memory for information about the visitor. However, without some cue as to what the memory is, the child cannot use his sense of himself (and the memories attached to this) to search his memory as others can. He has to wait for a more specific cue, perhaps fairly general, as in ‘What did you do in woodwork today?’ or even needing to be very specific, ‘What did you make with Mr. Smith today, using wood, which you sawed and hammered?’.

Alternatively, the boy could give the questioner ‘semantic’ personal memories; in other words, he could say what he usually does, or what he knows about himself (or about the context) in a general way. A teacher working with us on developing reflective approaches, for example, had a long discussion with a boy with autism about the ‘lemon meringue pie’ he had told her he had made in response to her query about ‘What did you do in cookery today?’. It was only when she spoke to the cookery teacher later, she found that he had in fact made a shepherd’s pie. In this case, the question was not specific enough to cue a personal episodic memory of what he had done in that particular cookery lesson, but instead cued a semantic memory of cookery lessons in general, picking out the ones he was most interested in because he liked lemon meringue pie.

What we are suggesting here is not that the child with autism is likely to have a poor memory for events overall, but rather a poor *personal* event memory. Because that personal dimension is missing, spontaneous search of memory for the details of an event is difficult and the child has to rely on being directly cued. Experienced teachers may well develop the ‘right’ level of cueing to elicit memories from children with autism, without necessarily being aware of what they are doing. This may be an effective compensatory strategy in the short term, but it may mask the child’s difficulties with memory. Failures in situations where the

staff are less experienced, or do not know the child as well, are then put down to problems in motivation or compliance since the teacher feels that the child 'remembers when he wants to'. That is why it is important for the teacher to analyse and reflect on his or her own behaviour, as well as that of the child, if the child is to be taught to become a more independent learner.

Ways of moving the children from dependence on cued memory towards more effective memory strategies, however, are not straightforward. The teacher needs to support the children's learning and not expose them to catastrophic failure, with no memories to rely on. Thus, it would be both cruel and pointless simply to remove the cues. The problem can be tackled on two fronts. In one, the child will be taught to self-cue and so to gain more independence in learning situations. In the other, a more remedial approach would be adopted, whereby the 'experiencing self, and through that personal event memories, would attempt to be established by emphasising the children's involvement in tasks. This could be done, using explicit means such as commenting on actions verbally or using photographs, videos or mirrors to draw the children's attention to their own role in the activity.

The notion of remediation of thinking in autism leads us to the final dimension of autistic thinking that we wish to consider, that of emotion. Any notion of remediation has to take account of the context in which experiences become salient and ones in which encoding via an experiencing self can take place.

Emotion

While it is clear that children with autism experience emotions it is less clear that they can reflect on them or use emotion to evaluate situations and imbue them with personal meaning. Emotion has often been treated by psychologists as separate from cognition, but more recently (Iveson, 1996), it has become apparent that emotion has a dual role. Part of that role is the feeling and expression of emotion, and at least some aspects of that may be intact in autism. But it is now known that the parts of the mid brain responsible for emotional arousal, also have connections with the cortical operations of thinking and problem-solving. There is also some evidence of damage to those areas in autism (Damasio and Maurer, 1978) and this would point to difficulties in attaching any notion of personal appraisal to what is seen or thought about. Thinking would become objective rather than subjective and there would be the range of difficulties identified above in meaningful perception, personal awareness and memory.

Undoubtedly learning could still take place in a purely cognitive sense, and (unless they also have additional general learning difficulties) there is no evidence that children with autism fail to learn in any global way. Information can be learnt by rote and recalled by a mechanistic set of learnt cues. But this is not the kind of learning that can be described as 'meaningful'. Rather, it is learning which remains at the level at which it was encoded, it is not readily transferable, it is not easy to act upon or to use flexibly or creatively. For learning to be 'meaningful' it has to change to some degree the way in which the learners perceive the world or