Contents

Editorial 2

ADHD in the classroom 3
Craig Wright

MUSEC Briefings: Issue 2 9

Communicating with families through family-focussed research 10
Barry Carpenter

“Teacher talk”: A school-based case study outlining a communication intervention within a regular classroom 22
Pam Heywood
Kathleen Tait

Behavioural momentum: A practical antecedent strategy to reduce noncompliance 40
Jennifer Stephenson

Facilitation of learning experiences through small group activities: A pilot study involving students who have learning difficulties 49
Julie E. Yamanashi

Announcements 68
EDITORIAL

Hello, is anybody out there?

Genevieve and I often wonder where approximately 1500 copies of Special Education Perspectives (SEP) end up after we see them emerge from the printery, and whether anyone reads it. More importantly, is SEP a valuable resource for practitioners and others working in special and regular education, and can it be improved?

And so we announce: THE RESPONSIVITY PROJECT! The first person to email or post me a brief comment (minimum 200 words) on some aspect of the journal (that can be included in the next issue) will win a delivered prize that befitting Christmas cheer. Bribery and corruption YES!! Are we desperate to know if anyone is actually engaging with the journal? YES! When Professor Kevin Wheldall served as Editor of SEP I always empathised with his positive efforts to attract a response and now I more fully understand the phenomenon of working in a journal vacuum. PLEASE tell us what you think about the papers, the layout, the features and so on.

Might we first introduce two new members of the Editorial Committee: Jeff Sigafoos from the University of Tasmania, and Wendy Kortman from Deakin University. Both Jeff and Wendy bring a depth of experience and expertise that will greatly benefit the Chapter, Association and the journal readership. Our sincere welcome and thanks for your work to date as invited reviewers for the journal. Our special thanks to Tony Shaddock, Outstanding SEP Reviewer for 2006.

This issue is another bumper with six contributions. Craig Wright provides a readable and practical overview of the needs of students with ADHD and how we can best support them in the classroom. This is followed by the second MUSEC Briefing, written by Jennifer Stephenson, on a topic that will attract the interest of many (also see full paper on the topic in this issue).

In the first of our four refereed papers, Barry Carpenter draws our attention to the critical importance of genuinely working with families to generate research and best practices that owned by all. Next, Pam Heywood and Kathleen Tait describe a useful intervention to address speech and language challenges in students enrolled in the regular class.

Next, Jennifer Stephenson provides a detailed discussion of the use of behavioural momentum with students who are non-compliant, as a complement to the MUSEC Briefing also contained in this issue. Finally, Julie Yamanashi details a study into the impact of small group learning opportunities on outcomes in students with learning difficulties.

What can we say? Lots to read and lots to respond to!! Merry Christmas from the Editorial Team: may you have a restful and refreshing break.

Michael Arthur-Kelly and Genevieve Farrell
Practically Speaking

ADHD IN THE CLASSROOM

Craig Wright
Language, Literacy and Learning Centre

Around 5 to 9% of children in Australia have attention deficit/hyperactivity disorder (ADHD). They are likely to be overactive, impulsive, inattentive, or distractible. They may also have problems in social and adaptive behaviour, and mental health problems such as depression, anxiety, or conduct disorder. Many children with ADHD also have a learning disability and almost all suffer from academic underachievement. This article will give teachers a brief overview of the problems experienced by students with ADHD and make suggestions for supporting these students in schools.

ADHD is a genetic disorder that affects the areas of the prefrontal cortex and related circuits in the basal ganglia and cerebellum. ADHD tends to run in families. It affects a number of areas in the brain, including the prefrontal cortex. This part of the cortex lies behind the forehead and its functions include working memory, language, impulse control, problem-solving, and planning. Many experts now believe that at the core of the disorder is a developmental delay in behavioural inhibition. Behavioural inhibition refers to the ability humans possess to put a pause between an event they experience and the response they make. For example, most of us are able to stop ourselves from lashing out or running away when someone annoys us. Behavioural inhibition is thought important for development of what neuropsychologists call the executive functions (skills). The executive skills allow humans to guide and plan behaviour. In students with ADHD this ability to pause and plan behaviour is impaired, which may lead to the following delays:

1. Reduced verbal and non-verbal working memory capacity. Poor working memory leads to poor hindsight and forethought. Children with ADHD therefore do not learn as well from previous behaviour or from previous consequences. They find it more difficult to plan future behaviour. The ability to monitor task performance and to make changes in response to error or feedback is also delayed.

Reduced working memory capacity also affects the child’s sense of time. They have difficulty planning behaviour across time and using time to manage task performance.
Children who fail to consider time and the future before acting show less goal directed behaviour, particularly for long-term goals. They are also more likely to be motivated by smaller, shorter, more immediate goals.

Working memory delays may also make the child with ADHD less able to utilise internally represented information such as rules, teacher or parent expectations, and social rules to guide behaviour. The ability to hold information in mind in both verbal and non-verbal form may also affect reading comprehension. The ability to process and code information in a coherent form may also be affected. Hence, children with ADHD can be observed clinically to have difficulty accessing information and concepts at critical times.

2. **Reduced self-regulation of emotion/motivation.** Children with ADHD experience the same emotions as other individuals. However, they have more difficulty inhibiting the external expression of those emotions. In other words, they are less emotionally inhibited. The ability to regulate emotion also affects the ability to create the appropriate level of arousal for task performance and the ability to create and sustain motivation. Motivation provides the persistence required to continue with tasks and goals in the absence of immediate reinforcement. Children with ADHD are therefore more dependant upon external reinforcement to influence and drive behaviour.

3. **Poor planning and problem-solving.** Effective problem-solving requires the individual to be able to hold and manipulate information in working memory, to form and to test hypotheses and to evaluate possible solutions, to monitor ongoing task performance, and to modify strategies where necessary. These planning and problem-solving skills may also be important for critical thinking. They allow the individual to evaluate competing information, to generate response options, and to evaluate likely consequences for long-term benefits. These abilities, which students with ADHD find difficult, are important for social problem-solving as well as academic achievement.

**Implications for classroom management**
Given the obvious importance of the executive skills for learning and performing basic academic skills such as reading comprehension and arithmetic, in addition to their importance for higher level problem-solving behaviours and for regulating behaviour and emotion, it is unsurprising that many students with ADHD experience difficulties within the curriculum. However, it is important for educators to recognise students with ADHD
can behave appropriately and learn adequately within a supportive environment that recognises and compensates for their unique difficulties. It is also important to recognise that the characteristics or features of ADHD exist on a continuum. In other words, there will be some students who display many features and who will find academic work very challenging. There will also be a number of children who are more able to problem-solve and manage their own behaviour. However, between these poles will be a large group of students with varying degrees of focus and self-regulatory behaviour. The following strategies will therefore be useful for many children in the classroom.

Addressing delays in sense of time. In terms of modifying classroom behaviour, educators must take steps to minimise the time delay between behaviour and consequences. The most effective programs are those that are implemented at the point of performance or immediately thereafter. Delayed reinforcement or punishment runs the risk of being ineffective because the student cannot establish the link between action and consequence. They will therefore be less able to use this information to regulate behaviour at another time.

The student’s ability to use time as a vehicle for planning behaviour will also adversely affect the ability to complete long-term projects. Given a homework project to complete in two weeks’ time, the student with ADHD will not begin until it is absolutely imperative to do so, and sometimes even later! The problem in using time can be illustrated by the following analogy. A typical child fishing in the middle of a harbour, when told that in fifteen minutes a supertanker will cross their path, will consider the following: where will I be safe, how long will it take to get there, how long will it take to get organised to leave, and therefore how much more fishing can I do? In contrast, the student with ADHD will listen to the warning and most probably recognise the danger. However, chances are that they will not plan how and when they will have to move. They will only be motivated to act when that supertanker looms large in their immediate world.

To help the student with ADHD achieve longer term goals, it is essential that educators help them break assignments and projects into smaller components with their own separate timetables and rewards. It is good practice to include the student’s parents in the planning and execution of longer term tasks, as at least some project work will need to take place within the home.

Make information and rules external to assist with behavioural regulation. Students with ADHD are less able to use internal information to regulate behaviour. Class rules, expectations for behaviour, and task instructions must therefore be presented externally.
where possible. The need to refer to and use these rules must be reinforced on a regular basis. Examples within the classroom include posters with class rules, task steps, or expectations on the whiteboard, and chore or task cards that can be placed on the child’s desk.

Not only do rules and expectations have to be made external, but so does motivation. Remember that students with ADHD find it more difficult to regulate the appropriate level of arousal for task performance and have less internal motivation. Put another way, the student with ADHD may not do something just because it is the right thing to do or because they know it will make the teacher happy. The use of external reinforcers will be necessary.

Many educators successfully employ a simple token or point system to support class rules. Make a list of privileges and assign each a point or token value. Then make a list of desired and/or undesirable behaviours and assign each a token/point value. Do not forget to make the lists external (write them down and display them in an obvious place in the classroom) and draw attention to them regularly. Tokens or points can be awarded for successful task/behavioural performance or removed when an undesirable behaviour is performed. At the end of the day, the student is able to “purchase” a privilege. Greater detail on the process of implementing a structured token/points system within the classroom can be found in Barkley (1997).

In addition to providing a means of motivating the student externally, a token/points system has several other advantages. Firstly, it encourages the educator to pay attention to the child’s positive behaviour. This can even up the balance between negative and positive teacher–student interactions. There is also greater chance that the student will learn what to do, rather than what not to do. Secondly, by providing a simple method of administering consequences for behaviour, it ensures that the time delay between consequence and behaviour is minimal. Finally, a token/points system can assist in teaching the student a fundamental social skill: the notion of fair recompense for fair performance.

**Reading comprehension.** Because disinhibition interferes with working memory, children with ADHD frequently have difficulty processing and understanding text while engaged in word-reading. Some students report clinically that they forget what they have read at the top of the page when they reach lower portions of the page. In severe cases, students even report difficulty recalling information within single sentences. They often retain only the most concrete and explicit details of a text, and have difficulty recalling more complex and sequential aspects of the plot. Temporal errors are also evident in their recall of plot and detail.
The key to supporting the student’s comprehension skills may be to, at least initially, highlight the meaningful information in a text. Ask direct and explicit questions about the text while the child reads. Encourage students to stop word-reading regularly to check for understanding and to establish sequence and meaning. Previewing the text prior to reading can also help identify themes and important points. Quality literature is usually predictable in that the main idea of each paragraph is introduced in a topic sentence. The remaining text in the paragraph is, by necessity, detail supporting the main idea. Teaching students how to deconstruct texts to identify main ideas and the framework used by the author can be a powerful tool for children with ADHD. If they know the main ideas prior to reading they can use what is left of their working memory capacity to fill in details.

Students with ADHD and all students with working memory problems should be taught to become active readers. They should make liberal use of strategies such as highlighting key words or phrases, underlining, writing notes in the margins, and making ongoing summaries. The use of a dictaphone can make the process of constructing summaries more time and energy efficient.

Reduce distractions. For most students, the more stimulation in a classroom the better. For a student with ADHD, who is far less able to resist distraction, posters, collages, mobiles, exciting bookcases, toys and the like are simply distractions. Anticipate the behaviour; remove the distractions. If the student does get distracted, remember that those with ADHD may have more difficulty re-engaging with a task. It is usually worthwhile to reiterate instructions and go over plans and strategies again following off-task behaviour.

Difficulties in changing strategies. Although not completely supported by research, some students with ADHD are observed to have difficulty changing strategies during a task. For example, if a student begins a series of math problems using addition, they may apply the same strategy to subsequent problems requiring subtraction—or at least it will take longer for them to solve the subtraction problem. Similarly, when reading a sequence of words with the same rime (cat, fat, sat, mat), they tend to get used to decoding the onset and adding the familiar rime /at/. They will often then apply the same strategy to other words in the sequence requiring a different set (e.g., set is read as sat). Once the set is broken, these students also appear to find it difficult to reapply the onset-rime reading strategy to the next word in the sequence containing the rime /at/. Educators may consider modifying tasks so that the requirement for changing strategies is minimised; however, this should be applied on a case-by-case basis, not as a blanket strategy for all students with ADHD.
Examples of task modifications include presenting word-reading and word-spelling tasks in onset-rime groups (word families) and arithmetic tasks in single operation sections.

**Difficulties in planning.** The suggestions provided above relate logically to the difficulties students have that are associated with working memory and self-regulation of emotion and motivation. Strategies to support the development of planning skills are harder to determine. The following are some suggestions.

When faced with a difficult problem, an adult often takes information that may otherwise be represented internally and makes it external. They will draw diagrams or pictures, they talk audibly to themselves while solving the problem, or they may use a scratch pad for doodling, to make notes, or to perform calculations. When overwhelmed many of us make written lists and many creative industries encourage verbal and visual discussions about processes and ideas. Educators may assist students with planning deficits by helping them explicitly deconstruct tasks and assisting them to break complex tasks into smaller steps. Discussions within the classroom about how each student plans to complete a task can be useful, as can student–teacher discussion about specific tasks. When a student with ADHD fails, the inevitable student–teacher discussion may be more fruitful if focused on what went astray in the process rather than in the outcome.

In summary, ADHD is a common disorder of childhood that leads to problems with behavioural inhibition and associated deficits in planning and organisation, perception of time, use of internally represented information to guide behaviour, working memory, and internal motivation. The key to helping these students achieve their best lies in understanding how ADHD affects students, and to use ongoing environmental modifications such as those outlined above to modify behaviour.

**Recommended readings**


BEHAVIOURAL MOMENTUM FOR STUDENTS WHO ARE NON-COMPLIANT

JENNIFER STEPHENSON

STATEMENT OF THE PROBLEM
Students may be non-compliant to teacher direction, even to the most basic of instructions. Some of these students do not have a hearing impairment, do comprehend the instructions and are able to perform the behaviours requested, but remain noncompliant. Severe non-compliance can make it impossible to teach a child and can lead to, or be associated with serious antisocial behaviour.

PROPOSED SOLUTION/INTERVENTION
The teacher identifies requests that the student is likely to comply with, as well as those that the child is likely to refuse. The teacher then promotes compliance by embedding instructions where the student is likely to be non-compliant in a sequence of instructions or requests that the student is very likely to follow. For example “Tell me what did you did at recess,” “Check out the goldfish,” “Tell me if you would like a drink,” and then “Come and sit down for story.” The teacher praises or otherwise rewards compliance with ALL instructions. It is helpful to have an assortment of requests the child is likely to comply with and to use different requests and sequences each time.

THE THEORETICAL RATIONALE — HOW DOES IT WORK?
This intervention is one that changes the antecedents or context of a problem behaviour. By delivering a sequence of requests, the teacher provides the child with multiple opportunities to respond. By choosing instructions that the child is very likely to comply with, the teacher provides the student with the opportunity to receive a preferred reinforcer. Delivering appropriate, reinforcing consequences for compliance to multiple requests, primes the child to continue to comply. When the problem request is delivered the “momentum” will carry the child through compliance with a previously refused request.

WHAT DOES THE RESEARCH SAY?
WHAT IS THE EVIDENCE FOR ITS EFFICACY?
A number of single subject studies have demonstrated the effectiveness of the procedures with students with and without disabilities in pre-school and school settings. Requests have been delivered by both adults and peers.

CONCLUSIONS
This is a reasonably simple procedure that is positive, proactive, unobtrusive, and flexible. It is likely to be successful if the requests are things the students can easily do.

THE MUSEC VERDICT: WORTH A TRY

Key references may be found at: www.aces.mq.edu.au/musec_co_brief.asp

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COMMUNICATING WITH FAMILIES THROUGH FAMILY-FOCUSED RESEARCH

Barry Carpenter
Sunfield School

ABSTRACT
The needs of young people transitioning into residential schools has been the focus of much recent research. However, the needs of their parents, and their extended families, has had less consideration. This article describes how Sunfield School in Worcestershire, UK, has involved families associated with the students in establishing and developing the school’s family induction process. Since 1998, families have taken part in surveys and a participatory research project. During this project, parents not only formed the research cohort, but were also involved in drafting the questionnaire, and in analysing the results, giving a valuable family perspective. The induction process which has evolved has widened its focus to include extended family members such as siblings, grandparents, and friends.

INTRODUCTION
The purpose of this article is to encourage schools to reflect upon family-centred practice—both whom they include as “family” and the different ways in which families can be involved. The evidence-base for the recommendations made, and ideas shared, have evolved from systematic analysis of family service development at Sunfield School, UK, over an eight year period (Carpenter, 2001; Carpenter, Conway, & Whitehurst, 2005; Carpenter, Conway, & Woodgate, 2003). This critical reflection, within the practitioner-led research paradigm (Carpenter & Egerton, in press), illuminates how a school can maintain its child-centred philosophy within the context of family-focussed service delivery. Sunfield School is a not-for-profit organisation, with 70 students in the 7–19 age range, and offers a 24-hour curriculum to its students (Chatwin & Harley, in press), the majority of whom have severe intellectual disabilities arising from their profound autistic spectrum disorders.

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Who counts as family?
Professional practice over the past 30 years has been strongly influenced by the concept of “partnership with parents” expounded by such authors as Dale (1996), Hornby (1995), and Wolfendale (1989). This concept has served us well, and has enabled schools to develop a dialogue with parents of children with special educational needs that has brought mutual benefits to each party, not least the child. Many schools and professionals have established excellent working relationships with parents, gently nurtured over many years (Beveridge, 2005). Indeed, the seedcorn of such partnerships is to be found in effective early childhood intervention (Carpenter & Egerton, 2005; Guralnick, 2005a).

However, in this 21st century, the concept of “parents” may not be the reality for many children. Whilst biologically every child has a mother and father, families nowadays are increasingly diverse and complex in their composition. Roll (1991) reports that for only one family in seven in the European Union is mother, father, two siblings in a married relationship, the reality. Professionals are increasingly finding themselves working with families with different values (Guralnick, 2005b), be it with families from socially disadvantaged backgrounds or immigrants (Pretis, 2006). Society itself places different emphasis on different family members at various times: fatherhood is currently very topical (Carpenter, 2002; Cohen, 2005; Foundation for People with Learning Disabilities, 2006). Schools find themselves working with many “self-defined” families (Carpenter, 2005), whose members may include grandparents, an older sibling, a stepfather or stepmother, or a family friend acting as a child-minder. Therefore, although we continue to communicate with families through familiar channels (e.g., home-school diaries, parents’ meetings and reviews), the recipients and attendees may no longer be solely the mother and/or father.

A framework for including families
In the spirit of inclusivity, most schools have welcomed extended family members who show a genuine interest in the welfare and upbringing of the child with learning difficulties. However, we do not always question ourselves about the particular and specific needs of these family members as opposed to parents. We need to broaden our communication focus and extend partnership to these additional family members who offer indispensable support (Carpenter, 2001). They can provide schools with a broader base and a richer perspective from which to engage in the shared task of educating the child with severe learning disabilities (Carpenter, 2003). Figure 1 (adapted from Hornby, 1995) offers a model for partnership with families.

Family support is crucial to the well-being of the child and, as McConkey (1999) discusses, this can take many
different forms. Indeed family-centred models of practice are now exhorted internationally (Guralnick, 2005a). At Sunfield School in Worcestershire, UK, a residential school for children with severe intellectual disabilities, the importance of family involvement is articulated through a “Family Charter” rather than a policy for working with parents. This Family Charter has been amended and ratified by consultation groups of families every two years since 1998, and its effectiveness is regularly evaluated (Carpenter, Conway, & Woodgate, 2003). The process has opened up two-way channels of communication enabling the school and its families to establish a partnership that is based on shared aims, principles, and aspirations.

**Practical inclusion of families**
The school’s commitment to the whole family is made clear with the opening statement of the “Family Charter”:

*Sunfield welcomes all our children’s families, friends and others significant in their lives.*

*Figure 1. A model for partnership with families (Carpenter, Attfield, & Logan, 2005, adapted from Hornby, 1995).*
When families join Sunfield, they are asked how they would like their child’s “significant others” (e.g., friends, godparents, neighbours, former key care staff) to be included. The Charter articulates what all family members can expect—respect, honesty, and integrity, confidentiality, regular communication, empathy, supportive listening, information, partnership, and a safe environment. These aims are reflected in specific objectives in the school’s Development Plan, and the Family Charter concludes by listing some of the ways in which these goals will be fulfilled—regular reports, the provision of family centres, home/school diaries, systematic telephone calls, provision of a family information base, sibling weekends, family fun days and half-termly newsletters (Carpenter, Attfield, & Logan, 2006). Obviously ideals must be expressed in concrete ways; the “tangibility factor” has to be strong. Families need to experience the school reaching out to them at their point of need. This became the impetus for a research project, coordinated through the Sunfield Research Institute, directly relevant to family need, which was driven by families, evaluated and validated by them.

Families as research partners
In addition to offering practical support to families, Sunfield has also drawn upon family expertise by inviting them to become involved in an action research project which will shape future practice. In 1998 and 2002, with the help of an independent analyst, Sunfield surveyed parents to solicit their opinions about the school’s services (Carpenter, Conway, & Woodgate, 2003). In 2004, building on these earlier family surveys, we decided to focus upon one specific aspect of Sunfield’s work with its families: the family induction process. Over several years the school’s induction process had evolved, and incorporated suggestions made by the families themselves through the bi-annual Family Surveys (Carpenter, Conway, & Woodgate, 2003). When a family accepted a place at Sunfield School, they were automatically offered a Link Family. This is an existing Sunfield family who acts voluntarily as a reference point and resource for the new family, providing emotional support, or those pieces of information that are much better shared parent to parent. This was an informal link, and once the two families had been linked by the Head of Family Services, the pattern, frequency, and depth of contact was entirely decided by the families themselves.

Induction to Sunfield School also involves a home visit by the Head of Family Services, and the key member of staff responsible for the child. The family is also encouraged to make pre-admission visits; this may be a weekend stay in one of the school’s Family Centres, and could be an opportunity to share the child’s future school placement with siblings or grandparents. During these visits, a profile of the child and its family is
developed to guide and inform those staff who will be directly involved across the staff team. Information about Sunfield is made available for other family members. For example, the Head of Family Services will explain to siblings about the “Sibs programme”. Activity days are held each term for siblings of all ages, and once a year there is a Summer Camp in the school grounds. These events also act as a catalyst for siblings to express their emotions in relation to their brother or sister with a disability (Conway & O’Neill, 2004).

In this research project, families were regarded as the main drivers of the research agenda (Russell, 2004), and the staff involved were the facilitators. As Carpenter, Conway, and Whitehurst (2005) stated, “Family centred practice demands family-focussed research methodology.”

Parents’ role in the research
In line with the thinking underpinning the research project, namely the principle of working in partnership with families, parental participation was sought throughout the research process. In essence, this meant that not only would the families share their views about the family induction process through interview, but that parents would also be involved in the data analysis. Twenty families volunteered to participate in interviews, and three parents agreed to become involved in a Parent Advisory Group (PAG) (Russell, 2004).

The PAG was fully briefed on the aims and methods of the research project. This group comprised two mothers and a father—all Sunfield parents. This gender mix proved important in order to retain both a maternal and paternal perspective in data analysis, which greatly added to the meaning and purpose of the exercise. Having three members in the group was felt to be beneficial for collaborative working, as it was small enough to allow each person’s opinion to be heard without becoming unmanageable as a discussion group.

Pragmatics guided the selection of the parents who would form the PAG, the most important criteria being an ability to understand the main issues arising from the induction process, formulate appropriate interview questions, analyse data objectively, and contribute to a meaningful discussion regarding outcomes, but other considerations were taken into account. For example, the homes of all three parents who became involved with this aspect of the project were relatively local to Sunfield, which made travel convenient and increased the likelihood of regular meeting attendance. Each parent had some flexibility in their working and personal lives to dedicate considerable time to the completion of the project, and all three had previously been involved in other parental consultations, which meant they had clear expectations of the task in hand and the commitment they were making from the outset, although all
three agreed they might have thought twice about consenting to participate had they known at the start just how time-consuming the process would be.

As befitted a family research project, the questions used in the semi-structured interviews with families were generated by the PAG, so that the design of the questions remained firmly rooted in the family perspective. A mixture of open and closed questions was used to elicit simple responses in some instances and to encourage more depth and reflection where appropriate. Both emotional responses and practical suggestions were welcomed in reply to questions concerning the families’ most powerful memory of the induction process, the most and least useful aspects of the process, and the aspect of induction that had given them most confidence. Families were also asked if the induction process had met the needs of the whole family, whether they remembered being given a Link Family when they were new to the school, and for any suggestions or recommendations they might wish to put forward, based on their experiences of the induction process. (The Appendix lists the interview questions, generated by the PAG, to be used by the research facilitators.)

Data collection and analysis
To give “ownership” for the research to the whole organisation, staff from all departments were invited to train as researchers, and the interviews were conducted by research pairs of newly trained researchers teamed with more experienced staff. A project management team, comprising Sunfield’s Chief Executive (as Director of Family Services), the Coordinator of Family Services, and the Research Officer, coordinated the project and the data analysis, and undertook the liaison with the PAG and an External Scrutineer.

The transcripts of the interviews, following approval by the family member interviewed, were then analysed independently by three different groups: the research group, the project management team, and the PAG. Each group identified the key messages in the transcripts. The key messages were then cross-referenced by the project management team and presented to an independent External Scrutineer. This provided triangulation of outcomes and ensured validity, reliability of judgement, and reduced bias. The independent Scrutineer approved judgements and asked questions that facilitated planning of outcomes into the daily working life of the Family Services at Sunfield School. As he had been involved with the earlier family survey work between 1998 and 2002, he was able to identify where outcomes from this research project resonated with messages from those earlier surveys.

The research process is summarised in Figure 2.
The main themes identified by parents as significant during their experience of induction were:

- Their emotional state at the time their child arrived at Sunfield and during their child’s settling-in period.
- The importance of feeling that Sunfield was the “right place” for their child.
- The importance of positive staff attitude, and the capacity of staff to understand.
- The importance of the Family Centres where they could stay during their child’s first days at Sunfield.
- The necessity of openness and honesty from staff about their child.
- The need for open channels of communication between themselves and the staff supporting their child.
- The importance of meeting the whole family’s needs.
- Having a link family to approach for advice and reassurance if needed.

Behind these emerging themes lay each individual family’s emotional journey. For any family, to have a child with a severe disability was not what they had planned for, nor for the impact of their child’s disability on the family to be so profound. Upon placing their child, at Sunfield many parents reported a sense of “loss”.

*Figure 2. Cycle of the research process.*
The questions in the interview schedule, for example, around least/most helpful aspects of the induction process, helped the school not only to appraise the tangible aspects of its practice (e.g., the Family Charter), but also to engender in staff those inherent qualities that were less tangible—openness, honesty, trust. (A fuller account of the research processes involved can be found in Carpenter, Conway, and Whitehurst, 2005, and Carpenter, Whitehurst, Conway, and Attfield, in press).

**CONCLUSION**

Involving parents and asking them about the services they need provided Sunfield with a pathway towards improved services through partnership with families. The research analysis showed clearly that families appreciated good communication, a network of support, staff who were open, friendly, competent, and flexible; and the provision of an environment suited to their child’s needs. These elements are fundamental to supporting families. However, through our dialogue with families in this project, they identified for us areas where change could be made in order to enhance their experience.

Alterations to existing practice will be rooted in staff training to ensure a consistency of approach and the facilitation of effective communication. The existing one day induction training for all staff, “Talking to Families, Listening to Families”, has been re-written and will be piloted throughout 2006 (Carpenter, 2005).

Certainly, the home visits to each family prior to their child’s admission have proved a useful tool in initiating a supportive reciprocal dialogue. These visits will be further developed to include support for completing the necessary paperwork and to discuss how the contact with a Link Family is initiated and maintained. The school will also be more proactive towards involving siblings within the induction period, and a child-friendly book introducing Sunfield School will be developed for them.

Like all families of a child with special needs, these families are on a journey, but they are on a journey as families not just parents. As one parent in this project said:  

*You’ve got to think of her [the sibling] and him [the child] and everyone else around you, and you have got to try and keep strong.*

Empowering families to have a voice (and ensuring this voice is heard, respected and responded to) keeps the school development process rooted in the continuing changing needs of our families. Schools and families, in forging a mutually supportive partnership, can keep each other strong.

**REFERENCES**


*Professor Barry Carpenter OBE is Chief Executive and Director of Research at Sunfield School, Clent, Worcestershire, UK. He holds an Honorary Chair in Early Childhood Intervention at the University of Worcester, UK.*
Appendix 1. Sunfield Research Institute “Families Induction Process”—Research project interview questions

- What is your most powerful memory of this time?

- What was the most useful/helpful aspect of your induction?

- What was the least useful/helpful aspect of your induction?

- What aspect of your induction gave you the most confidence?

- Did the induction process meet the needs of the whole family?
  
  YES  How did we do this?
  
  NO   Who could we have involved?
       How could we have involved these people?

- Do you remember being given a Link Family?
  
  YES  Do you think the timing was appropriate?
       Did you contact the Link Family?
       How helpful would it have been if the Link Family had made the initial contact?
NO Were you offered a telephone number of another Sunfield family? (If YES, go back to YES questions.)

Do you think this would have been useful?

- Based on your experiences, what alterations and/or additions would you make to the induction process?

- Would you be willing to participate in a follow-up interview?

YES NO
Refereed Papers

“TEACHER TALK”: A SCHOOL-BASED CASE STUDY OUTLINING A COMMUNICATION INTERVENTION WITHIN A REGULAR CLASSROOM

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ABSTRACT
Speech–Language Impairment (SLI) is a disability experienced specific to speech–language processing resulting in a substantial reduction in the capacity for communication. Children exhibiting this level of communication impairment tend to make fewer communicative initiations and exchanges than normally developing children matched on a developmental level (McConachie & Mitchell, 1985). While communication intervention is often a major component of educational programs for children with significant speech and language (S–L) impairments attending special schools, there is relatively little information available on successful communication intervention programs implemented in regular classrooms by general classroom teachers. This article describes one intervention program that was undertaken in a primary classroom by the class teacher of a Year One child who exhibited average intelligence; but who also experienced a significant speech and language impairment. This classroom-based intervention focused on enhancing a young child’s communication exchanges within a regular morning circle activity. The use of age-appropriate sentence starters, sign language, and reinforcers was used to encourage the student to correctly use the personal pronouns “I”, “me”, and “you” during the classroom routine of Show and Tell.

INTRODUCTION
Language disorders in school aged children provide a unique challenge to regular classroom teachers. A student is considered to have a language disorder where an impaired understanding or expression of language is having a significant and
measurable impact on their learning (ACT Department of Education, Youth & Family Services Special Education Section, 2004, p. 3). Where the severity and nature of a language disability cannot be attributed to an intellectual, physical, or sensory impairment or to social/emotional or socio-cultural factors, children with specific language impairments (SLI) often have difficulty learning new words (for a review see Gathercole & Baddeley, 1993). Further, they often acquire their first words later than children with normal language development, may produce a smaller variety of words than their normal language peers, and often score below children with normal language on norm-referenced vocabulary tests (Weiss, 2001).

Current educational support for students with specific language disorders in Queensland schools includes collaboration and consultation between the classroom teacher, Support Teacher (Integration) and speech pathologist, throughout the academic year. If such services are available, students may also be afforded timetabled support from the school’s Learning Assistance Program (LAP) throughout the week. However, if left unchecked, the impact of a severe SLI could have quite socially debilitating ramifications for a young child being educated in a regular primary classroom environment.

Unfortunately, knowing how to approach and manage significant communication problems in the regular classroom, continues to challenge many general primary educators. Consequently, a need exists for the dissemination of successful approaches to assist teachers to provide effective communication opportunities to students with speech–language impairments in the regular classroom environment. This article outlines the implementation of one such procedure. This intervention program was designed by a primary teacher to enhance a young child’s communication exchange skills in the context of an existing morning circle classroom activity.

**Literature review**

A major change in communication intervention in the past 20 years is related to the contexts in which intervention occurs. In contrast to isolated therapy sessions, best practice in communication intervention today generally involves “milieu training”. To be most effective, the milieu approach requires that communication training be couched within the envelope of the natural, functional activities of the learner’s day (Sigafoos, Roberts, Kerr, Couzens, & Baglioni, 1994).

While communication intervention is often a major component of educational programs for children with significant speech and language (S–L) impairments attending special schools, it should be noted that when children with (S–L) impairments are educated in the regular education environment, implementing an intervention program to address their communication needs may need to be
of ordinary adult-child interactions into highly distinctive and discrete events that are more easily discriminated by the child” (cited in Mash & Barkley, 1998, p. 426). DTT is a useful teaching approach in communication intervention programs as it can readily define the learning incident for both communication partners within the naturalistic setting of a daily classroom routine. Further, this approach appears to represent a practical and ecologically valid technique requiring minimal time and labour in a setting already pushed for instructional time (Sigafoos & Saggers, 1995).

In addition to how to teach, when designing a communication intervention for a child with a significant speech impairment, a regular classroom teacher needs to be aware of the many benefits of pictorial self-management (i.e., use of visual signs, etc.) as an aid for communication. For a person who has a severe communication impairment, Porter & Kirkland (1995) assert that,

...it is vital that a way of communication other than speech is explored and established early in life to allow the student to develop all of his/her skills from the perspective of an active independent contributor in interactions, thus preventing negative learning that will effect the development to his/her whole personality. (p. 6)

Similarly, Goldstein (2002) found hand sign or total communication training experiments...
resulted in a quicker and more complete learning of vocabulary than speech training. Pierce and Schreibman (1994) identify the benefits as the visual aids being small and lending themself well to being readily transported to numerous and novel settings. Signs are less transient than words, and gestures and signs are easier to prompt than verbal productions (Goldstein, 2002). They may also be easily faded. Finally, Buffington, Krantz, McClannahan, and Poulson (1998) demonstrated that these communicative attempts with signs are virtually indistinguishable from age-matched typical peers.

In the regular education environment, it is the classroom teacher who can most quickly and effectively support and document the progress of a student’s speech goals. If classroom teachers can demonstrate a positive change in a child’s behaviour as a result of an intervention program, then they are in effect producing evidence of a benefit due to the instructional process. For a child with significant S–L impairments, increased social interactions through successful communication exchange can set the stage for other developments as well; for example, inclusion in more normalised educational settings. Thus, the development of positive, long-lasting relationships with peers and others would be a welcome and significant side benefit to any classroom-based communication intervention program.

The following section will address the current inadequacies of a young boy’s previous communication program. It will also highlight the rationale for a new communication intervention program which was implemented during a Year One class morning circle session.

**Introducing “Alex”**

Alex (pseudonym) is a young boy who attends a Year One class in his local primary school in Queensland, Australia, on a full-time basis. Alex has recently been assessed as having a mild learning disability. Consequently, twice a week, during the afternoon program, Alex attends his school’s Special Education Unit for segregated specialist lesson support. At the time of the communication intervention, Alex was aged 6 years 11 months. Specifically, Alex has a repaired (R) unilateral cleft lip and palate, which severely affects his speech intelligibility. In addition, Alex wears an upper denture and has recently received grommets due to recurring ear pathology. This child has excellent use of gesture and intonation, which assists in his communication with others. Alex’s IEP assessment identified him as having a formal ascertainment of a Speech–Language Impairment at Level 5.

A student ascertained under category 5 Speech–Language Impairment in Queensland, indicates that while the child has at least an average non-verbal
intelligence, the child’s learning at school is significantly hampered by his or her speech and language related difficulties (Education Queensland, 1998c). Unfortunately, due to the increasing numbers of children being identified as requiring specialist services in inclusive educational settings, there are limited opportunities for children to access regular individual speech therapy intervention at their local primary schools. Alex receives no individual speech therapy services at his school. However, as a result of obtaining a Level 5 on his Speech –Language Impairment ascertainment, Alex may have access to an IEP. One of the long-term goals of that IEP focuses on improving Alex’s communication skills within the regular primary classroom.

The situation prior to intervention
While enjoying his class activities, it was noted that Alex would rarely initiate conversation, nor would he attempt to make communication exchanges even if prompted to do so. Class activities and occasions where Alex was given an opportunity to gain increased confidence in his communication skills while developing correct sentence structure and vocabulary use were a high priority in his IEP. Alex’s original IEP goal read:

*Alex will use the pronouns “I”, “me”, “you” when participating in prompted class communications with 80% accuracy on each occasion.*

Alex’s teachers had been asking “what”, “where”, and “why” questions to help promote Alex’s use of pronouns. However, this had not been sufficient to achieve the correct acquisition of personal pronoun use by Alex. So a new intervention program was warranted. Additionally, it was determined that his teachers had no efficient way of collecting data to chart Alex’s progress toward the communication IEP goal. Howell and Nolet (2000) insist that a charting progress is absolutely necessary because without it “…a teacher may not recognize when a student is falling behind until he is so far behind that correcting the problem requires a massive intervention” (p. 189). With this immediacy in mind, a communication goal from Alex’s IEP was adapted as a priority goal. It was considered by his teachers that this goal would be well worth the time and effort to attain as a short-term objective for Alex.

Rationale for the communication intervention design
The social validity of Alex’s IEP goal had already been addressed, as the groundwork of soliciting indirect consumers’ values (Schwartz & Baer, 1991) had been established in the drawing up of the IEP priorities. In this case, indirect consumers would include the student’s family members and teacher(s). To assist Alex to feel more confident while participating in mainstream Show and Tell and oral presentations, IEP team members concluded an age-
appropriate goal would be for the student to use “I”, “me”, and “you” correctly while retelling or sharing an event.

It is expected that the explicit instruction and attention afforded Alex in the group setting of Show and Tell will enable other students in the class (less tolerant to correction) with similar (S–L) impairments the opportunity to also display the correct use of language in retelling an event. Alex enjoys individual attention and would respond well to any explicit teaching technique. He seeks to please and so would be cooperative in many ways. Alex’s teacher saw this opportunity as a way of increasing his confidence, while also helping Alex to consolidate his learning with respect to his IEP goals.

Previously, Alex’s teachers had been using verbal prompting on its own. Unfortunately, this teaching approach had not been successful as Alex had failed to understand the communicative efforts made by his teachers when attempting to help him learn. DTT was chosen as the teaching approach in this study as it was felt that this instructional strategy would more readily define the learning incident for both communication partners within the naturalistic setting of a daily classroom routine.

In Alex’s case, the desired goal of his communication intervention program was to change his communication behaviour in a positive direction. Consequently, using an effective research-based practice was an extremely important aspect of this process.

Schloss and Smith (1998) maintain that “…skills targeted by applied behaviour analysis intervention programs should be immediately useful to students, yet ultimately contribute to their ability to live and work successfully in community settings” (p. 23).

This concept is vitally important to regular classroom teachers who are contemplating designing an intervention program for children with special needs in inclusive settings. Teachers should expect that increasingly informed parents will be asking for data on their child’s performance and change. Therefore, regular classroom teachers need to consider utilising some reliable method for tracking an intervention program’s progress. According to Alberto and Troutman (2006), applied behaviour analysis (ABA) represents the simplest single subject research paradigm for demonstrating cause and effect relationships in behaviour change. Thus ABA was chosen in this instance as it also permits an experimental analysis of behaviour. The following section will discuss the methods and results of Alex’s new communication intervention program.

METHOD
Baseline probes
In an effort to establish the child’s current use of personal pronouns, prior to intervention, baseline information was collected for three Show and Tell sessions while Alex spoke. During these three sessions, the teacher would record Alex’s correct and incorrect use
of personal pronouns. In addition to baseline data on performance, a list of subjects that Alex liked to talk about during this time was also noted for guiding the construction of the sentence starter cards that would be used in the intervention program.

In response to the results of the baseline data, other age-appropriate sentence starters were included in the intervention program to broaden Alex’s repertoire of subjects to share about, and a new short-term goal for Alex’s communication intervention was planned. Alex’s new IEP goal was:

-&gt; **Alex will use the pronouns “I”, “me”, “you” when relating an event during Show and Tell with reference to sentence starters and sign prompts on 80% of occasions for 3 consecutive trials.**

**Materials**

Presenting language stimulation using the visual modality seemed to capitalise on an area of relative strength for Alex. Consequently, a series of sentence starters with pictorial representations of the signed prompts were developed to aid Alex’s thinking and retelling of an event. Age-appropriate sentence starters and signs for the words “I”, “me”, and “you” (Jeanes, Reynolds, & Coleman, 1989) were also used and subsequently faded.

Some examples of Alex’s sentence starters were:

- On the week-end I …
- Can you guess what this is?
- Guess what I am?
- My family and I …
- I have a joke to tell you …

**Intervention program**

During treatment sessions, Alex was encouraged to share with the class five things about his chosen topic. If 80% accuracy was not attainable after these five things, then questions were asked of him for more opportunity to demonstrate his improving
ability at using personal pronouns correctly. As with all discrete-trial strategies (Smith, 2001), five components of the task were followed for program intervention during the class procedure of Show and Tell. These strategies are listed below.

**Procedural steps**
Teacher presents a brief instruction that Show and Tell is about to begin. Alex chooses from a number of cards with signed representations and sentence starters relating to the telling of an event. He takes this card with him to the floor ready to begin.

1. **Cue (or discriminative stimulus):** The teacher, by way of a brief, clear instruction, invites Alex to share his Show and Tell.

2. **Prompt:** Teacher assists the child in reading the sentence starter and using the corresponding sign. With systematic shaping and prompt-fading, the child learns to perform the behaviour accurately when cued to do so by the teacher.

3. **Response:** Alex will correctly or incorrectly use personal pronouns “I”, “me”, and “you” in his sentences.

4. **Consequence:** For every correct use of the pronoun, Alex will receive a sticker on his chart. For an incorrect response, the teacher will signal by shaking her head and saying, “try again”. The teacher will sign the correct pronoun. This will be faded to the shaking of her head.

5. **Inter-trial interval:** After giving the consequence, the teacher may ask Alex to keep going or ask a question relating to his story as a cue for the next trial.

NB: Each attempt made at using a personal pronoun was considered a trial.

Teaching sessions followed closely those routines already established within the classroom so as not to disrupt learning experiences of other children. A roster was drawn up indicating on which day each student could share Show and Tell and which students were the “questioners”.

*Figure 2. Classroom roster.*
To increase the number of times Alex had to share his *Show and Tell* without letting on to other students, Alex was asked to share in the place of whoever was absent that day.

A number of researchers advocate the use of multiple strategies to teach language acquisition (e.g., Buffington et al., 1998; Goldstein, 2002; Porter & Kirkland 1995). McClannahan and Krantz (2000) argue that ABA treatment should not be characterised by any one procedure, such as discrete-trial instruction. They suggest, “Although the discrete trial paradigm in unquestionably useful, so are incidental teaching, time delay, peer tutoring, photographic and written activity schedules, script fading, and video modeling procedures” (p. 210). Throughout the intervention, teaching opportunities were not limited to the discrete-trial approach of the *Show and Tell* routine, although this was where data collection took place.

**RESULTS**

**Baseline data**

Baseline information was collected while Alex spoke by recording a tick (✓) for every correct attempt and a cross (✗) for every incorrect use of personal pronouns. The baseline probes indicated that even with questions, Alex generally used no more than three sentences when sharing his *Show and Tell* (refer to Table 1). This information was used to inform how many spaces should be left when generating Alex’s language progress display.

The data in the baseline sessions in Table 1 is indicative of a descending, albeit stable trend showing Alex’s progress was nowhere near the IEP objective of using the pronouns correctly on 80% of occasions. However, treatment sessions in Table 1 do indicate a slightly ascending, though variable trend.

**Intervention Program Data**

Upon implementation of the communication intervention program, data was collected for 10 *Show and Tell* sessions while Alex spoke. Correct attempts were recorded by a tick (✓) and incorrect use of personal pronouns was recorded with a cross (✗) (refer to Table 2).

Teacher correction and self-corrections were recorded as two attempts. At the conclusion of the lesson, Alex received feedback about his successes. He then placed a sticker on his chart (see Figure 3) for every correct attempt

### Table 1

**Baseline Trial (Unprompted Performance)**

<table>
<thead>
<tr>
<th>Date</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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<th>13</th>
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<th>15</th>
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<tr>
<td>7th</td>
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<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>3/8  = 38%</td>
</tr>
<tr>
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<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✗</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
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<td>✗</td>
<td>✗</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3/9  = 33%</td>
</tr>
</tbody>
</table>
The date and percent correct were recorded under these.

Upon the introduction of the sentence starters and signing package, however, it is evident that Alex’s ability to correctly choose the right pronoun for his sentence has increased. There was a jump of 20% in accuracy simply with the introduction of the cue cards in Session 5. Results outlined in Figure 4 and Figure 5 indicate that the introduction of the program caused both an improvement in the accuracy of pronoun use as well as an increase in the number of settings.

Although Alex was unable to attain 80% accuracy for three consecutive trials, his average percent correct across 10 sessions was 79.5%.

The procedures used during this intervention satisfied criteria for social validity (Geller, 1991) insofar as “enabl[ing] the student to become more independent, mature, and self confident… enhanc[ing] the student’s personal dignity and freedom” (p. 180). In evaluating the social validity of the effects of this educational program, social comparison (Wolf, 1978) was also used to compare the language patterns and behaviours made by Alex with the levels demonstrated by his competent peers.

For better generalisation across settings and more spontaneous production of pronouns to result, incidental teaching (Hart & Risley, 1975) was utilised, requiring that Alex initiate an attempt to communicate. Milieu language teaching in this way capitalised on the student’s desire and interest in his natural environment to embed teaching opportunities (Matson, Sevin, Box, Francis, & Sevin, 1993) and reduced the need to program for generalisation.

Table 2

<table>
<thead>
<tr>
<th>Date</th>
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<th>2</th>
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<th>4</th>
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<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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<th>13</th>
<th>14</th>
<th>15</th>
<th>Result</th>
</tr>
</thead>
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<td>✓</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>7/11   = 64%</td>
</tr>
<tr>
<td>15th</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>9/14   = 64%</td>
</tr>
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<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
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<td>x</td>
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<td>4/6    = 67%</td>
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<td>✓</td>
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<td>✓</td>
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<td></td>
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<tr>
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<td>x</td>
<td>✓</td>
<td>✓</td>
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<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
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<td>6/9    = 67%</td>
</tr>
<tr>
<td>29th</td>
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<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>8/11   = 72%</td>
</tr>
<tr>
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<td>31st</td>
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<td>x</td>
<td>✓</td>
<td>✓</td>
<td>x</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>7/10   = 70%</td>
</tr>
</tbody>
</table>

he made. The date and percent correct were recorded under these.
For each attempt at pronoun use, Alex was encouraged to use the correct personal pronoun. Typically, Alex would substitute “me” for “I” in most sentences (e.g., “Me did it.”). At this opportunity the teacher would either sign and wait for Alex to identify and say the correct pronoun, or invite him to “Try again”. Alex was often confused with verbal correction where the teacher would attempt to pull him up with, “No. I did it.” In response to this correction he would typically answer, “No! ME did it!”

*Figure 3. Alex’s language progress display (sticker chart).*
DISCUSSION

Lovaaas (1996) asserts, “The most constructive approach for any educational program is to consider failure in the child’s progress as a reflection of inadequacies in the educational program, rather than failure on the child’s part” (p. 247). Further specification is needed to delineate what treatment components are planned as part of a treatment program, to determine the extent to which the treatment components are in fact implemented as part of a treatment program (treatment fidelity), and to begin to determine what components are more and less responsible for treatment effects (component analyses). From the intervention, it is hard to say which had more bearing on the child’s progress: the discrete-trial training or the milieu language teaching and incidental teaching (all of which were used to capitalise on the time available in the natural environment in which to embed teaching opportunities). Possible confounding impacts are outlined in Table 3.

One would also want to be confident that treatment effects are not attributable to the effects of the added attention given to the
student enrolled in the treatment study, to the effects of repeated testing or measurement, or other threats to internal validity.

Given that Alex’s communication goal from his previous IEP had not yet been achieved, an explicit focus on his pronoun use was warranted. Probe and baseline data ensured an appropriate starting point was being used with a challenging and attainable goal in sight. The intervention was simple to manage and in the short space of 10 weeks, yielded some positive results. Percentages had to be used to record progress as the number of attempts at personal pronouns varies with the subject matter and number of sentences. Variances in the data points are evidence of this. For some Show and Tell sessions, Alex would choose the cue card “Guess what I am?” From here on

Figure 5. Relationship between total number of attempts and correct attempts for each session across Baseline and Treatment conditions.
in, his attempts were repetitive (e.g., I am gray. I live in the sea. I have fins . . . etc.) and correct. For other sentence starters he was not so sure about, attempts were made, but more frequently incorrect.

Reliable data collection requiring minimal time and labour in a setting already pushed for instructional time was one goal in the formation of this intervention program. With the method of collection outlined in the intervention, teachers can be confident in their ability to collect reliable data without disrupting the natural learning setting. Further, if another teacher was to collect data, the purposes and criteria for allocating scores was clear. Alex’s language progress sticker chart does not directly illustrate his attaining the goal of 80% accuracy on three consecutive trials. For example, on the third day of intervention, Alex scored 91% accuracy and placed 10 stickers on his chart (10 correct from 11 attempts). On the fifth day, he scored 100% accuracy but only used five pronouns so could only place five stickers on his chart.

It must be noted, however, that reinforcement was not restricted to the number of stickers on the chart. Verbal feedback and praise was also given. Despite its inaccurate representation of attainment of the IEP goal, including the sticker chart in the intervention served a very important purpose. Alex was involved in charting his progress, which increased his motivation to concentrate on pronoun use and further developed his self awareness of learning and attaining his language goal. He proudly showed his sticker chart to visiting teachers and classmates. In addition to his increased

Table 3

<table>
<thead>
<tr>
<th>Variables Polluting Treatment Effects</th>
<th>Attention drawn to correct use of pronouns</th>
<th>Incidental teaching opportunity</th>
<th>Data collected</th>
<th>Improvement observed (data-based or teacher’s “hunch”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory board games and other play sessions</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Show and Tell</td>
<td>✓</td>
<td></td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Answering questions in class</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Field trips</td>
<td>✓</td>
<td>✓</td>
<td></td>
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</tr>
<tr>
<td>Lunch time games</td>
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<tr>
<td>Maths small groups</td>
<td>✓</td>
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<td>✓</td>
</tr>
</tbody>
</table>
accuracy in pronoun use, it was also observed that the number of sentences he used rose from baseline probes to treatment trials.

**CONCLUSION**
Teaching language to children with severe communication deficits has “a profound impact on the lives of both the children and the people who interact with them everyday” (Goldstein, 2002, p. 392). Alex had previously failed to understand the verbal prompting made by his teachers attempting to help him learn and, as a result, he had not reached his IEP goal of more than 6 months to correctly use three personal pronouns while sharing his Show and Tell. Same age peers were now using these regularly in their discourse, and his teachers were concerned his classmates might start to consider Alex immature and begin to isolate him.

A series of sentence starters and signed prompts was developed to aid this child’s thinking and retelling of an event, and offered many benefits to his achievement of this goal. It has been found that rudimentary language skills, similar to the three personal pronouns targeted in this intervention program, can make a tremendous difference in the ability of children to control their environment, proving to be immediately useful to students, and ultimately contributing to their ability to live and work successfully in community settings (e.g., Goldstein, 2002; Hart & Risley, 1975; Matson et al., 1993; Porter, & Kirkland, 1995).

Communicative attempts with the three signs (Auslan signs for “I”, “me”, and “you”) outlined in the intervention are virtually indistinguishable from age-matched typical peers (Buffington et al., 1998) and will greatly assist Alex’s discourse in his mainstream classes. For example, when Alex is presenting his Show and Tell in his mainstream class, his special educators could offer language stimulation using the visual modality (i.e., signing from the back of the classroom) with other students unaware of the assistance he is being given.

Perhaps simply targeting incorrect pronoun use as it happens throughout the school year would have resulted in the same progress. Once Alex knew what was expected from him in his language use, he was able to concentrate on pronouns, as he knew this was what was being targeted.

At the ten week point, task demands exceeded Alex’s previous capabilities of correctly using the personal pronouns “I”, “me”, and “you” with 80% accuracy on three consecutive trials. However, the attention afforded him during this time increased Alex’s motivation to concentrate harder on his language use. During week 10 of data collection on this treatment program, it was noted that Alex was pausing and thinking before answering questions and glancing occasionally at his teacher’s data sheet. With encouragement
and incidental teaching, Alex will most assuredly reach this IEP goal. It has been his goal for the past 6 months. However, with this new treatment approach, in just 10 sessions, and with each session taking no longer than 3 minutes each in length, Alex has demonstrated a marked improvement in his ability to use personal pronouns correctly. Alex’s teachers and parents are continuing to make use of every milieu language opportunity to further develop Alex’s awareness of his pronoun choice.

Cleary, when considering implementing and collecting data on an intervention program for one student, the constraints of a busy mainstream classroom are significant. However, it is vitally necessary for classroom teachers to obtain reliable and consistent data when implementing any intervention program. Data collected in a class-based intervention will allow the demonstration of the reliability and generality of that program. It will also increase the teacher’s confidence that the intervention program was the intervening variable that produced the behaviour change in the targeted child. However, in this case, one way of reducing the data collection load for the classroom teacher might have been to capitalise on Alex’s self-awareness of his use of pronouns, and thus design an easy form of recording of data in a range of classroom situations.

The correct use of personal pronouns with appropriate and increasingly sophisticated communication skills is held by researchers as having the potential to have “… far-reaching implications for academic achievement, social relationship development, and vocational outcomes” (Goldstein, 2002, p. 389). Dougherty (2005) suggests that if speech problems are left unchecked, this may lead to reading and spelling difficulties, social challenges and self-esteem problems. Unequivocally, the strongest resource any child with a S–L impairment can have is a team approach from the dedicated classroom teacher and well-informed parent who understands which speech sound errors are normal, which are not, and how to create naturalistic opportunities to help a child articulate speech sounds when they are developmentally ready.

REFERENCES


BEHAVIOURAL MOMENTUM: A PRACTICAL ANTECEDENT STRATEGY TO REDUCE NONCOMPLIANCE

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ABSTRACT
Although originally developed to address noncompliance in people with severe intellectual disability, interventions employing behavioural momentum have now been extended to a wider range of populations and to compliance with requests to begin or continue academic tasks and social interaction, as well as requests related to behaviour management. The interventions are easy to implement, requiring no special materials or personnel, and are recommended as a practical approach for teachers to use when addressing noncompliance.

Noncompliance is one component of disruptive behaviour that concerns parents and teachers. It is the refusal of the child to comply with reasonable adult directives or prohibitions or failure to cooperate with requests and suggestions. Refusal may be passive, where the child simply does not comply or takes some time to begin to comply, or active, where the child openly defies the directive and may perform some other behaviour. Serious noncompliance in younger children may be a precursor to more challenging behaviour, such as aggression, and to other social and academic difficulties. Continued noncompliance in educational settings clearly impacts on a student’s learning, and frequent noncompliance is a serious behaviour problem in educational settings (Walker, Ramsey, & Gresham, 2004; Zirpoli, 2005). Extreme noncompliance is characteristic of disorders such as conduct disorder and oppositional defiant disorder (Kauffman, 2005). Rates of noncompliance in these children may be twice as high as in normally developing children (Kauffman, 2005).
Serious defiance of an adult direction or request may often be the end point of an ongoing interaction where the exchanges become increasingly hostile and the child moves from passive to very active noncompliance as the adult expresses demands in an increasingly hostile tone. These patterns of coercive interactions teach the child antisocial behaviour through the processes of negative reinforcement as adult withdrawal of directions follows increasingly active noncompliant and defiant behaviour (Kauffman, 2005). When teachers are considering strategies for intervention it is more helpful to focus on approaches which take into account environmental influences rather than approaches which view noncompliance as part of a psychiatric disorder located in the child. Maag (1999), in his discussion of noncompliance, noted the importance of the patterns of adult communication with a child in the management of problem behaviour and disobedience. If children can be placed in conditions where they comply with a number of requests in succession and that compliance is rewarded, the pattern of compliance is likely to persist and previously refused requests or directions will be complied with. This pattern is called *behavioural momentum* (Mace, 1996; Nevin, 1996).

Strategies to increase compliance using behavioural momentum were first applied to people with severe disabilities (see, for example, Mace et al., 1988). It was found that compliance with requests that had previously resulted in noncompliance (low probability requests) was increased if these requests were preceded by a sequence of high probability requests (such as “Give me five, Touch your head”) delivered 5 seconds apart. Compliance with all requests was followed by reinforcement. This illustrates two features of behavioural momentum: many opportunities to respond in a way that complies with a request, and reinforcement of each compliant response to give high rates of reinforcement for compliance. The task for the interventionist who wishes to establish compliance is to establish a high behavioural momentum for compliant responses so compliance will persist.

Typically in interventions using behavioural momentum, the interventionist presents a series of three or four high probability (high-\(p\)) requests in quick succession. These are requests where the response is easy and quick for the person to perform, and are requests that the person is known to be very likely to comply with. Compliance with each of these requests is rewarded. There need to be three or four high-\(p\) requests delivered in fairly quick succession because shorter intervals and frequent responses increase the rate of reinforcement (Mace, 1996). The low probability (low-\(p\)) request is then delivered after this sequence of reinforced compliant responses. Table 1 summarises the steps to be taken in designing and implementing an intervention for non-compliance using the behavioural momentum strategy.
Although the procedure was developed with people with severe intellectual disability, a number of recent studies have applied the principles of behavioural momentum to school students in regular settings and to students with less severe disabilities. For example, Ardoin, Martens, and Wolfe (1999) studied the application of behavioural momentum strategies to three second grade children in a regular education class. The children had been identified as noncompliant by their teacher,
particularly during transition times. During a whole class transition time, the teacher interspersed three high-\(p\) instructions (instructions previously complied with on all occasions), such as “Clap your hands”, with low-\(p\) instructions related to the transition routine, such as “Clear your desk”. The teacher praised one of the target children after compliance with one of the low-\(p\) requests, as well as other compliant children. The intervention was then faded by slowly removing the high-\(p\) requests. This group oriented intervention was successful for two of the three students, and was highly acceptable to the teacher.

Behavioural momentum interventions have also been applied successfully to less severe noncompliant academic behaviour in situations where students are slow to begin, or fail to persist in completing academic tasks. In some of these interventions, the high-\(p\) tasks have been easier academic tasks and the low-\(p\) tasks have been harder academic tasks. For example, Belfiore, Lee, Vargas, and Skinner (1997) reported on an intervention with two girls (aged 14 and 15) who were in a segregated setting following their expulsion from a regular school for general noncompliance. Latency to begin maths worksheets was reduced after an intervention that presented three high-\(p\) maths problems (easier one-step multiplications) before each low-\(p\) maths problem (harder multiple-step multiplication problems). This approach extended the use of behavioural momentum because it used functional academic tasks for the high-\(p\) requests and did not deliver praise after the completion of each problem. The presumption is that completion of the easy maths tasks was intrinsically reinforcing for the students. This is an advantage because it means that sustained one-to-one attention from the teacher to deliver verbal praise or tangible reinforcers may not be required for successful implementation.

Employing a similar approach of using easy and hard academic tasks, Belfiore, Lee, Scheeler, and Klein (2002) worked with two 10-year-old students (one with emotional disturbance and one with learning disability) who failed to commence or complete tasks. For these students the easy tasks were one digit X one digit multiplication problems and the low-\(p\) tasks were multiple-digit multiplication problems. The time the students took to commence tasks was reduced when sets of problems contained low-\(p\) problems preceded by high-\(p\) problems. This intervention is also of interest as it was successfully carried out by a preservice teacher in a practicum classroom.

In an application that used writing tasks, Lee, Belfiore, Scheeler, Hua, and Smith (2004) intervened with two second grade students who failed to commence academic tasks or failed to complete work appropriately when they had acquired the necessary skills. These students were presented with
letter copying tasks (high-\(p\) task) and word copying tasks (low-\(p\) task) interspersed on the same worksheet so that students completed two or three letter copying tasks before each word copying task. This presentation increased student performance of the low-\(p\) task and was an effective intervention for one student. They also reported on an intervention with four other older students with similar problems in a self-contained class for students with learning and behaviour difficulties. This intervention employed a similar strategy with maths problems (harder problems were low-\(p\) and easy problems were high-\(p\)). In this intervention the delivery of extra reinforcers (tokens for completing each problem) was compared with no additional reinforcement. The addition of extra reinforcement enhanced the effect of interspersing high and low-\(p\) tasks. This finding does add a caution about the need for continuous teacher attention, but suggests that if simply interspersing tasks does not bring satisfactory results, the teacher could then try adding additional consequences for compliance as a back-up procedure.

Using a similar strategy, but employing task related behaviours rather than academic tasks for the easy task, Wehby and Hollahan (2000) worked with a 13-year-old girl with learning disabilities. They used a sequence of short high-\(p\) work related requests, such as “Get out a sheet of paper”, delivered before the low-\(p\) request to start work on a maths assignment. This procedure reduced the time taken between the request to start work and the student actually starting work from around 1 minute to 20 seconds and increased engagement with maths work.

Lee and Laspe (2003) reported on an intervention to help students remain on task. It was used to increase the written output of four students aged 10 to 11 years who had various disabilities and who did not remain engaged in journal writing tasks. The high-\(p\) request used when students had stopped their journal writing for a minute was to ask them to write three single words, then the low-\(p\) request was for them to resume journal writing. A verbal prompt procedure where the student was simply reminded to start writing after a pause was slightly more effective than using the high-\(p\) sequence in terms of the number of words written in the journals. The high-\(p\) strategy was slightly more efficient for the teacher in that more words were written for each request using that procedure compared to words written following the simple verbal prompt. For both procedures, adding praise when the student began writing increased the effectiveness of the intervention. This study was also carried out by a teacher working within her own classroom.

Ray, Skinner, and Watson (1999) used a behavioural momentum procedure in a different way to transfer control of compliance from requests delivered by the child’s mother
to requests delivered by the child’s teacher. The child, a 5-year-old with autism, had been moved to a segregated setting due to extreme non-compliance, aggression, and running away. An intervention procedure was used in which the high-\(p\) requests were those delivered by his mother and the low-\(p\) requests were those delivered by his teacher. Initially, the mother delivered the requests and the teacher delivered praise for compliance, then after three parent requests, the teacher issued a request. The parent requests were gradually faded until the child was compliant with the teacher in the treatment setting. Food was also introduced as a more powerful reinforcer for compliance. Follow up in the classroom showed the student was now compliant with his teacher, and he eventually returned to a regular school setting.

No intervention procedure for problem behaviour is totally effective for all students, and there have been failures of the behavioural momentum procedures in both normally developing children and people with disabilities (see, for example, Rortvedt & Miltenberger, 1994; Zarcone, Iwata, Mazaleski, & Smith, 1994). Some students may need more powerful reinforcers for compliance to build up the behavioural momentum. Mace, Mauro, Boyajian, and Eckert (1997) worked with adolescent boys with intellectual disability who were highly noncompliant and aggressive. Low-\(p\) requests included basic directives such as “Come over here” and “Stand up.” Compliance with high-\(p\) requests was followed by praise, food, or both. High-\(p\) with praise was not enough to improve compliance with some requests, but compliance was increased by the use of food reinforcers, and compliance with low-\(p\) requests persisted longer when food (a stronger reinforcer) was a reward for compliance with the preceding high-\(p\) request.

Davis and Reichle (1996) explored the use of an intervention to increase initiations of social interactions in two 5-year-olds and two 4-year olds with emotional-behavioural disorders who had no cognitive impairments. In this intervention, peers were trained to deliver the requests. Compliance with high-\(p\) requests delivered by a peer (such as “Pick up the marbles”) was followed by a social response from the peer, which continued the interaction. Compliance with low-\(p\) requests (such as “Share the marbles with X”) resulted in praise and continuing interaction. If the child did not respond to requests, the peer turned away for 30 seconds then recommenced the sequence. Davis and Reichle found that when the same high-\(p\) requests were used, compliance with requests to initiate a social interaction gradually decreased, but when high-\(p\) requests were varied responding remained high. It has been suggested by Zarcone et al. (1994) that when the same high-\(p\) requests are used they may become a predictable part of a discriminative stimulus for noncompliance. The student recognises that particular requests always precede a low-\(p\) request and the high-\(p\) requests may become as aversive as the low-\(p\) requests (Davis & Reichle, 1996). Alternatively, there may be satiation with the reinforcement offered for
high-p responses that reduces responding to requests in general. This suggests that developing a pool of high-p requests and delivering them in varying sequences may be the best way to proceed. It may also be important not to overuse the intervention, or the reinforcers delivered in the intervention, in order to avoid satiation.

The use of the principles of behavioural momentum has thus been shown to be applicable to a wide range of students. The nature of the requests involved has included requests related to classroom behaviour, academic tasks, and social interaction. These antecedent procedures require little in the way of special materials and the number of studies that report on natural classroom use demonstrate that they are practical and easy to implement. The primary requirement is that teachers identify requests that students are highly likely to respond to as well as those requests that result in noncompliance or delayed compliance. These easy procedures are worth a try in dealing with noncompliant behaviour before moving on to more complex interventions or as part of multifaceted interventions for noncompliance.

REFERENCES


**NOTE:** Many of the articles cited from the *Journal of Applied Behavior Analysis* are freely available through http://seab.envmed.rochester.edu/jaba/
FACILITATION OF LEARNING EXPERIENCES THROUGH SMALL GROUP ACTIVITIES: A PILOT STUDY INVOLVING STUDENTS WHO HAVE LEARNING DIFFICULTIES

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University of Queensland

ABSTRACT
Teachers assist students’ participation in classroom activities to provide them with opportunities for positive academic and social experiences. This pilot study investigated what teachers did in their classrooms to obtain such benefits, particularly in assisting students with learning difficulties when using an inclusive pedagogical approach such as small group activities. Two Year 6 teachers’ classroom interactions with six students with learning difficulties, three male and three female, were investigated. A focus group interview was conducted with the teachers to determine implicit ideas on inclusion. Ten 25-minute observations were made of teacher verbal interactions and student behaviour interactions in each classroom. The results indicated that teachers relied on one-on-one verbal interactions with students during group activities. Furthermore, teachers did cognitively challenge students during learning experiences; however, when the teacher’s individual attention was not present, learning opportunities in group situations were reduced. Implications of the study include opportunities for teachers to specifically structure group activities to ensure peers’ individual and group accountability in order to promote positive learning opportunities through small group interactions and support.

INTRODUCTION
To achieve the most productive benefits for all students, teachers seek to create effective learning opportunities. However, when it comes to meeting their needs, resources can be limited. Nevertheless, all students should have the opportunity to achieve their potential in an environment that respects
individual diversity (Education Queensland, 2001). This study investigated what teachers are presently doing in their classrooms to include all students, particularly those with learning difficulties.

**Learning opportunities**

The literature suggests, from a socio-cognitive perspective, that individuals come to understand and accommodate new and novel ideas through interactions with others (King, 2002). In actuality, such cognitive exchanges can be accomplished through cooperative peer interactions (Johnson & Johnson, 2003). However, in typical classroom activities, cognitive exchanges are usually experienced through interactions with the teacher. The implications of this way of thinking set the scene for a more experienced individual (expert other) to manage a task so that a less experienced individual (novice) can participate. This involves the expert (or teacher) segmenting or structuring the task to make it achievable. The task then becomes an experiential opportunity for the novice (or student) to build upon his or her present understanding with the assistance of a more expert other (Rogoff, 1990).

The expert assists the novice to build upon current understanding through problem-solving, in order to be able to solve more complex problems. Through shared problem-solving or communication, the novice has interactive opportunities to share in cognitive challenges at various levels that connect known understandings to new ideas (Vygotsky, 1978). The process of shared problem-solving, including asking or answering of questions and requests for peer explanations, is the cornerstone on which understanding is established (King, 1991; Rogoff, 1990). The opportunity to share in the resolution of such problems offers each participant a responsibility in completing the task (Vialle, Lysaght, & Verenikina, 2005). Through social interactions, this process of mediating the novice through finding a common ground and then leading the novice on from there (scaffolding), exceeds mere modelling and imitation of actions (Vialle et al., 2005; Wood, Bruner, & Ross, 1976). Actual “comprehension of the solution must precede production” for this approach to effectively be mastered by the novice (Wood et al., 1976, p. 90). In this way, the concept of building upon understanding through cognitive challenge under the guidance or apprenticeship of an experienced other can take place.

Cognitive apprenticeships provide opportunities for teachers to work with students in a mentoring approach to learning to achieve educational outcomes. Students observe the task through listening intentionally to modelling by the mentor (Rogoff, Paradise, Mejia Arauz, Correa-Chavez, & Angelillo, 2003; Woolfolk, 2004). They also receive coaching assistance and scaffolding of ideas, express their
understanding of the task, reflect on the process, and explore new ideas individually (Woolfolk, 2004, p. 335). All the while, the teacher provides the feedback necessary to correct any misunderstandings and continues to guide students into more complex activities while reducing support as the learner obtains greater skills (Woolfolk, 2004). Over time, this approach changes as the needs of the students change.

Cognitive challenge
Students who interact with others in group situations experience learning opportunities and cognitive challenges that could not be experienced alone. Interaction with members of the group creates opportunity for cognitive activity which then leads to greater development and learning opportunities (Vygotsky, 1978). When expert others help an individual to complete a task that could not be completed alone, they are, at that time, working with that individual’s Zone of Proximal Development (ZPD) (Vygotsky, 1978). Individuals are cognitively challenged to experience a re-ordering of or enlarging upon old ideas to assimilate new ideas, thus enlarging understanding. Working within the area of ZPD can predict what the student will be able to accomplish alone in the future (Vygotsky, 1978). This approach to learning can be facilitated by expert others including peers and groups (Johnson & Johnson, 1999a).

Social interaction is necessary for individuals to build upon their understanding of the world around them. When facilitated by an expert other, be it a teacher or peer group, an individual’s development progresses, as he or she completes activities that he or she could not do alone. For development to continue it needs to be facilitated by an expert other in group interactional contexts that require accountability of contribution from each participant. It is commonplace for the teacher to provide such opportunities; however, when the teacher is not present, students find this experience difficult to emulate (King, 2002). Students need a specifically structured approach to group interactions (usually provided by the teacher) for thought provoking and engaged complex learning experiences to be created.

Social interdependence
Through interactions in groups, students can experience opportunities to share their ideas. However, group composition determines how those ideas are shared (Johnson & Johnson, 1999a). A relational link between group members may create common group goals that can include cooperation and competition, or there may be no connection between group members at all. In the latter case, individuals work to achieve individual outcomes that do not affect others in any way. When cooperation is the goal, members realise that only if they work together will they achieve the desired goal. When there is a negative relationship, group members work to challenge the outcomes of others (Johnson & Johnson, 1999a).
Cooperative groups
The structure of the group determines the interaction patterns members take up to achieve specific outcomes (Johnson & Johnson, 2003). In a cooperatively orientated relationship, students need to realise they need to work together if all are to achieve the group’s goal. There are five requirements to be fulfilled for cooperative groups to function in a positive manner (Johnson & Johnson, 1999b). These requirements are: positive interdependence, individual and group accountability, promotive interaction, social skills, and group processing. They are discussed below.

Positive interdependence requires goal interdependence to promote greater achievement, but when reward interdependence is also included, motivation to achieve group goals increases. Personal accountability creates the tension to move each group member towards fulfilling the group goals. Promotive interaction creates the motivation for each member to encourage others to fulfil the tasks and provide help when needed. Social skills are necessary for group members to engage in positive interactions. Group processing helps members to reflect on interactions. The outcome of participating in cooperative groups facilitates a greater sense of well-being among group members, and members will exert more effort to achieve academic outcomes (Johnson & Johnson, 1999b).

Facilitating classroom activities that promote positive academic and social learning opportunities supports an inclusive approach to learning (Putnam, Markovchick, Johnson, & Johnson, 1996). This can be achieved when teachers embrace a mentoring approach to interactions with students. The pilot study involved two teachers who conducted small group activities with six students with learning difficulties. It was expected that the teachers would form small groups and conduct activities that facilitated students’ needs, but would be unaware of how to structure activities in a cooperative learning sense to promote students helping each other. The study investigated (1) teachers’ ideas on the topic of inclusive classroom practices; (2) teachers’ interactions with students based on cognitive challenge; and (3) students’ opportunities to interact in small groups to facilitate learning experiences. The following questions addressed these three areas:

1. What perspectives do teachers draw upon to create inclusive learning practices specifically related to including all students in classroom group activities?
2. How do teachers foster interaction in order to promote student learning?
3. What types of student behaviours are observed during small group activities?

METHODOLOGY
The school
The school was located in a Southeast Queensland rural-residential area 64 kilometres from Brisbane. It provided primary
educational programs for around 983 students from Years 1 to 7 coming from mainly lower- and middle-income families (Beaudesert Council, 2005). This school was chosen due to its emphasis on the encouragement of positive relationships between administration, teachers, students, and parents.

The school’s socio-economic standing was rated by Education Queensland using the Australian Bureau of Statistics Index of Relative Socio-Economic Disadvantage (IRSED). The category of Middle-High for this school was calculated according to the number of enrolments at the school and the location of students’ addresses according to postcodes (Greenup, personal communication, March, 2005). Calculations used by Education Queensland are based on District Census Collection Data information relating to school families’ employment, income, education, family structure, and housing, etc. The school is considered unique in the area due to its high standard of behavioural expectations from all students (Quinn, personal communication, February 4, 2005).

Participants

Teachers. The pilot study was conducted in two Year 6 classrooms. The two teachers were considered to be highly competent and experienced by their principal. Both teachers had worked with students with learning difficulties over a number of years with commendable success. The male teacher had 13 years experience and the female teacher had 7 years classroom teaching experience.

The researcher met with the two teachers prior to the commencement of the study to discuss which students would be chosen, according to the Appraisal of Students Education Queensland policy guidelines statement (Education Queensland, 2002), and the classroom group activities that would be completed. The teachers were asked to conduct small group activities that would normally take place in their classrooms, where the students would work together and help each other. Group composition regarding ability levels and gender were discussed and clarified; however, the teachers were not instructed on how to set up small groups, so the study drew on the teachers’ current understanding of teacher and student interactions and behaviours in small groups.

Students. The study involved six students with learning difficulties that had been appraised by the learning support teacher and were considered to be either Program 2 or 3 students. Program 2 or 3 students’ access to the curriculum was limited through short-term or persistent problems in literacy, numeracy, or learning how to learn (Education Queensland, 2002). Teachers’ units of work were therefore mainly or extensively modified to include strategies and resources to create a classroom learning
environment that enabled students in Programs 2 or 3 better access to the mainstream curriculum.

The pedagogical characteristics for Program 2/3 included:
- extensive modifications to strategies, resources, and classroom learning environments;
- collaboration between the learning support teacher and the classroom teacher in program design and implementation;
- active participation in planning by a range of people including the classroom teacher, learning support teacher, speech–language pathologist, communication teacher, reading recovery teacher, key teacher (and high level support from relevant specialist personnel) (Education Queensland, 2001).

The characteristics of the six students are provided in Table 1.

**Instrumentation**

*Focus group interview.* In order to determine their implicit ideas on inclusive learning, teachers were invited to participate in a focus group interview. The teachers were asked specific questions regarding the topic of inclusion in the classroom, and how it related to students with learning difficulties who had been appraised as requiring Program 2 or 3 assistance. Topics for discussion flowed from open-ended questions and included: identification of the learning needs of students with learning difficulties; meeting their needs on a day-to-day basis; academic and social outcomes of students with learning difficulties; the role of the teacher; and, the role of the principal. The researcher and trained assistant conducted the focus group interview. A summary was made at the end of the interview to gain the teachers’ approval of the content discussed. The interview was audio-taped and transcribed for data analysis using the NVivo indexing and key word search program.

*Teacher observation schedule.* Each teacher’s verbal interactions with students during each observation were audio-taped and analysed through critical event sampling. That is, all observed verbal interactions or critical events were coded by frequency of occurrence throughout the 25-minute observation period and tallies were made of each verbal interaction variable. Further comments were also recorded at the bottom of the sheets. Ten 25-minute observations were made of each teacher in each classroom.

Teacher verbal interactions included:
1. **Scaffolding:** provided support that was gradually withdrawn as the learner becomes more capable, including giving prompts, cues, and feedback to students.

Sounds like: “What could we use in the room to help us understand what the word means? Okay, we have our dictionaries there, we can go and get
Table 1

*Age, Gender and Program Level of Year 6 Students*

<table>
<thead>
<tr>
<th>Student</th>
<th>Age (yrs &amp; mths)</th>
<th>Gender</th>
<th>Program Level</th>
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<tbody>
<tr>
<td>1</td>
<td>10yrs 6mths</td>
<td>M</td>
<td>2</td>
<td>Major modifications required to curriculum</td>
</tr>
<tr>
<td>2</td>
<td>10yrs 8mths</td>
<td>M</td>
<td>3</td>
<td>Extensive modifications required to curriculum</td>
</tr>
<tr>
<td>3</td>
<td>10yrs 7mths</td>
<td>F</td>
<td>2</td>
<td>Major modifications required to curriculum</td>
</tr>
<tr>
<td>4</td>
<td>11yrs</td>
<td>M</td>
<td>3</td>
<td>Extensive modifications required to curriculum</td>
</tr>
<tr>
<td>5</td>
<td>11yrs 6mths</td>
<td>F</td>
<td>2</td>
<td>Major modifications required to curriculum</td>
</tr>
<tr>
<td>6</td>
<td>11yrs</td>
<td>F</td>
<td>2</td>
<td>Major modifications required to curriculum</td>
</tr>
</tbody>
</table>

them … use them for our sentences.” “What did we do last week when you couldn’t think of something to write? … do you remember?” “I’ll get you a sheet of paper … write down four things that you can share … do your little plan.” “I don’t know what to write.” “Remember when we did the little plan? We wrote down four things … okay, so once you’ve got your four things listed you can just hit them easily.”

2. Modelling: provided an example of how the task was to be completed, including detailed explanations and sample solutions.
Sounds like: “What is the first thing you will do when you get a find-a-word? … look at it and see what stands out, glance you eyes over it and think, oh, look there is one there, ‘groundwater’… that is what I always do, check forwards and then check backwards down the lines and see if any just jump out at you.” (Modification from Ashman & Elkins, 2002, pp. 542 & 547)

3. Shared problem-solving: provided interactive opportunities to share in cognitive challenges at various levels, including asking and answering questions, and requests for peer explanations.

Sounds like: “How many have you got over there?” “Five.” “What are you going to do to start off with?” “What do you need to do when you pair off?” “I’m not sure.” “What are you going to do Jordan?” “We are going to work together.” “What do you need to do to start off with though…” “Someone has got to…” (King, 1991, p. 315)

4. Repetition with expansion: the teacher adds a new idea or connecting link to the one he or she is repeating.

Sounds like: “Found any words that you don’t know yet?… what’s condensation?” “I think it’s when you watch white clouds go to grey.” “How about we go over and have a look … we talked about it when we had our drink bottles, when we had the…” “Oh, the water on the outside of the bottle.” “Yes, the condensation.” “It goes on the mirror too when you have a hot shower.” “Your sunglasses fog up going from a cold room to a hot area, same thing.”

5. Directives: any comment that concerns procedures for the conduct of group processes.

Sounds like: “We have a word-find to do. There are 40 words at the top. Put a line through them… don’t scrub out the words underneath.” “Identify five words at a time and put them in a sentence.” (Shachar & Sharan, 1994, pp. 326–328)

Teacher verbal interactions were tape-recorded and analysed later for a more accurate coding result. That is, the tape could be stopped and replayed if clarification of specific interactions was required. The observations were recorded on a coding sheet.

**Student observation schedule.** Each classroom teacher chose three students who had been appraised as requiring Program 2 or 3 assistance. All three students in each class were observed during classroom literacy group activities. Each student was observed for 5 minutes using momentary time sampling (Harrop & Daniels, 1986). Observations occurred at
10-second intervals with a 5-second break between each 10-second recording over a period of 5 minutes for each student. Only the behaviour that was observed at each 10-second interval for the student was recorded. In total, 20 observations were recorded for each student at each observation (Gillies, 2004). There were ten 25-minute visits to each classroom.

Student behaviour interactions (Gillies & Ashman, 2000) included:
1. Cooperative behaviour: included all behaviour that was task-orientated, socially orientated positive behaviours, active attention to others in the group, including listening to other group members discuss the task.
2. Non-cooperative behaviour: included all behaviour that was designed to exclude others or demonstrate resistance to the group, such as opposition and criticism, to attain one’s goals at the expense of others.
3. Individual task-orientated behaviour: involved the individual working on the task but not with the group.
4. Individual non-task behaviour: included all behaviour where the individual was not participating in the group activities and was not working individually.

Student behaviour interactions were video-taped and analysed later for a more accurate coding result. Individual students could be clearly identified from the recording as they participated in literacy group activities. Observations were recorded on a behaviour coding sheet.

Trained assistant. A male assistant with 16 years teaching experience, and the researcher, evaluated audio recordings of teachers’ verbal interactions and video recordings of students’ behavioural interactions. The assistant had worked in primary and secondary schools and had experience observing children’s behaviours.

Inter-scorer reliability. The research assistant was trained to code the audio and video-tape recordings during the study. The observation categories were reviewed with the researcher on both teacher verbal and student behaviour interactions, and practice was completed on trial audio and video recordings. At the end of each practice session a debriefing session was conducted to analyse specific verbal and behavioural interactions comparing them to the coding sheet descriptions. Training continued until interobserver reliability on teacher verbal interactions was greater than 80% and student behavioural interactions was greater than 90%, with 80% being considered a satisfactory level of interobserver agreement (Gay & Airasian, 2003). Interobserver reliability was calculated using the formula (Madelaine & Wheldall, 2004, p. 60):

\[
\text{% Agreement} = \frac{\text{agreements}}{\text{agreements} + \text{disagreements}} \times 100
\]
The researcher and trained assistant coded a common 6 hours of teacher verbal interaction audio recordings and 2 hours of student behavioural interaction video-tapes. Interobserver reliability estimates were 86% across teacher verbal interactions, and 93.5% across student behavioural interactions.

**Procedure**

The researcher met with the two teachers prior to the study to discuss expectations, which students would be chosen, and the classroom group activities that would be completed. Groups were formed of approximately five students of mixed gender and ability. Each group completed a series of different literacy activities throughout the week on a rotational basis. These activities included journal writing, reading comprehension, guided reading, and grammar.

The usual classroom literacy program was continued while the study was undertaken. Three students with learning difficulties from each class were placed in a group with two higher-level ability students from the same class (i.e., students not requiring appraisement). The groups were gender balanced. The rest of the class worked in similar small groups in the classroom during that time using the same literacy program. The first observed group had three male students and two female; the second observed group had two male and three female students.

Literacy activities were formed around the theme “Water Catchment” which the students were studying during science. During the research study, the observed activities included reading comprehension, find-a-words, and crosswords that drew on knowledge of the “Water Catchment” unit. For each observed lesson, each teacher set up the groups, provided instructions on the content to be covered, and then monitored the groups, providing assistance when needed. At times, the teacher sat with the group that was being observed and helped the students complete the activity. The teachers were not instructed on how to set up groups so the study drew on the teachers’ current understanding of teacher and student interactions and behaviours.

Teachers wore or held a hand-held audio-tape recorder throughout each observation. They were audio-taped for two observations each week, approximately 1 hour in total for each teacher per week over five weeks. The audio-tape recorded the teacher verbal interactions as they assisted each group’s literacy activity so that all interactions could be coded by observers. Ten observations were completed for each teacher; a total of 20 teacher observations were completed by the end of the study.

All students worked in their literacy group activities for approximately 1 hour per day, four days each week. The researcher made two observations for each class each week;
a total of approximately 1 hour of video footage was taken of each group each week. The video monitor recorded behavioural interactions of all students in each of the observed groups so that all interactions could be viewed and coded by observers. Ten observations were made of each student; a total of 60 student behavioural observations were completed for the two classes. The video camera was set up by the researcher, and students completed their activities with their teacher while the researcher was a non-participant observer focused on group interactions (Gay & Airasian, 2003).

**RESULTS**

**Data analysis**

Analysis of the focus group teacher interview occurred using NVivo indexing and key word search program. Audio-taped recordings of teacher verbal interactions were coded using a critical event sampling procedure and included scaffolding, modelling, shared problem-solving, repetition with expansion, and directives. Results are set out in Table 2 displaying the frequency in percentage form. Video-taped recordings of student behavioural interactions were coded using a momentary time sampling procedure and included cooperation, non-cooperation, individual task-orientated, and individual non-task orientated. Results are set out in Table 3 displaying frequency in percentage form.

**Focus group interview.** The researcher and trained assistant completed the focus group interview with the teachers in week 2 of the study. The audio-taped conversation commenced with the teachers stating their years of service. Questions were then asked according to the focus group questionnaire. The emergent theme encompassed student inclusion resulting from one-on-one contact with adults (i.e., journal writing with classroom teacher, assistance of specialist teacher, teacher aide). A 2- to 3-minute summary of the interview was made by the research assistant confirming the content of the interview.

**Facilitation of learning through one-on-one contact.** The teachers were very diligent in requiring accountability for outcomes. This goal was achieved through various activities during whole class, small group, but specifically one-on-one time with the students. During small group activities, extra staff provided support for student learning, with teachers indicating that “because we have extra support we are able to offer the kids one-on-one…[if] these kids don’t have the concept…they will go with someone [say, the learning support teacher] and come back with the knowledge of something.” The teacher’s role is that of “guide…this is how you do it.” This approach is similar to creating a mentoring relationship. The teacher guides or scaffolds the student in order for the student to build on his or her present level
of understanding (Rogoff, 1990). This can be achieved through verbal or written communications.

The teachers emphasised that journal writing was an important form of communication with the students. It “allows us to engage each child individually by what we write back to them.” Teachers can communicate in journal writing as “you can use your response to facilitate their writing by directing it in a certain way, or address social issues.” That is to say, in journal writing they also “have that one-on-one time where the child can stay safe and not be exposed to other kids knowing what is going on… so, it might be something like ‘I noticed you were having trouble in maths come and see me, I can help you here with some examples, or you are really switched on with the way you listened to this direction and I’m really proud of you…’ I guess that is like something that we do, isn’t it.” These opportunities provided students with efficacy as “it allows you then to make them take ownership of their own education and their own role in the room.” Through apprenticeship of learning or guiding students, the teacher created a mentoring relationship that seeks to assist the less knowledgeable other.

**Teacher observations.** The results of the pilot study of teacher verbal interactions (interactions coded by frequencies) were coded according to categories described earlier. Table 2 presents the percentages of frequency of occurrences of those interactions.

Teachers 1 and 2 used scaffolding as the main approach to verbal interactions (38.9% and 42.9% respectively) with students. Teacher 1 used more shared problem-solving (28.6%), while teacher 2 chose to use directives (33.7%). Modelling and repetition with expansion were weighted more or less evenly by both teachers, but teacher 2 used these methods to a much lesser degree than teacher 1.

The above results indicate that the teachers mainly relied on the cognitive processes of scaffolding and to a lesser degree shared problem-solving during verbal interactions with students while conducting classroom activities. Directives then became part of the repertoire for teacher 1 to facilitate students’ timely progress in completion of activities. Teacher 2, however, used directives more frequently, being seconded only to scaffolding as a means of facilitating student progress.

**Student observations.** The results of the pilot study of student behavioural interactions (coded using momentary time sampling) were coded using the categories described earlier. Table 3 presents the percentage of occurrences of those behaviours.

All students with learning difficulties displayed cooperative behaviours ranging from 52.0% to 67.0%. This is compared
to individual task-orientated behaviours which ranged from 32.0% to 47.0%. There were no non-cooperative behaviours (0.0%) displayed at any time by any of the students and very little individual non-task orientated behaviours displayed, the highest being 1.5% from student 1.

As there was no distinction made during coding of observations of student behaviour interactions between cooperative behaviours with the teacher and those of peers, it is difficult to determine the extent of teacher-to-student or student-to-student interactions. This will be addressed in the major study to follow. Teacher-to-student interactions and student-to-student interactions will become distinct categories in the student behaviour observation sheet. However, it was noted by the researcher and trained assistant that students interacted cooperatively almost exclusively with the teacher during small group tasks, yet when the teacher was not present the students tended to work individually.

Teacher verbal interactions, when compared to use of student behaviour interactions, tended to suggest that a relationship existed. Teacher 1 spent 10% more of the time in shared problem-solving than teacher 2 (28.6% vs 18.4%). This could be reflected in teacher 1’s students being slightly more cooperative, with the mean percentage of student cooperation with the teacher being 61.5% and individual activity being 37.5%. Teacher 2’s students were slightly less cooperative, with the mean percentage of student cooperation being 54.5% and slightly more individual activity (44.8%). This situation could reflect the fact that teacher 2 spent more than twice the amount of time on directives (33.7%) than teacher 1 (15.0%).

Table 2

*Frequency of Events (%) for Verbal Interaction Categories of Two Teachers*

<table>
<thead>
<tr>
<th>Verbal interaction variable</th>
<th>Teacher 1</th>
<th>Teacher 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scaffolding</td>
<td>38.9%</td>
<td>42.9%</td>
</tr>
<tr>
<td>Modelling</td>
<td>8.0%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Shared problem-solving</td>
<td>28.6%</td>
<td>18.4%</td>
</tr>
<tr>
<td>Repetition with expansion</td>
<td>9.5%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Directives</td>
<td>15.0%</td>
<td>33.7%</td>
</tr>
</tbody>
</table>
**DISCUSSION**

Teachers in this small pilot study appear to create inclusive learning opportunities for students in small group activities. However, teachers tended to create inclusion in small groups to support one-on-one learning with the teacher, thus disempowering peers to work together and help each other.

The focus group interview confirmed that teachers supported an apprenticeship of learning approach to interactions with students who had learning difficulties. They considered themselves to be the guide or mentor who managed the tasks for the students in order to assist them in skill acquisition (Rogoff, 1990; Rogoff et al., 2003). According to teacher 1, the students “go away with someone and come back with the knowledge of something.”

The teacher’s role is “guide… this is how you do it.” They are considered the expert working with the novice to facilitate learning that could not be done alone. The teachers stated that as “we have extra support staff we are able to offer the kids one-on-one.” This approach to interactions assists students with learning difficulties as they receive one-on-one support. The mentor is able to segment or structure the task to create an achievable learning opportunity (Rogoff, 1990). They are challenged cognitively in a social setting with an expert other leading the learning experience in order to construct and come to shared understandings (King, 2002).

These shared understandings can be achieved through communication in verbal or written interactions with the expert. As teacher 1 noted, journal writing “allows us to engage

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**Table 3**

*Frequency of Events (%) for Behaviour Interactions for Six Students with Learning Difficulties*

<table>
<thead>
<tr>
<th>Behaviour interaction variables</th>
<th>Student 1</th>
<th>Student 2</th>
<th>Student 3</th>
<th>Student 4</th>
<th>Student 5</th>
<th>Student 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooperation</td>
<td>60.0%</td>
<td>57.5%</td>
<td>67.0%</td>
<td>55.0%</td>
<td>56.5%</td>
<td>52.0%</td>
</tr>
<tr>
<td>Non-cooperation</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Individual task-orientated</td>
<td>38.5%</td>
<td>42.0%</td>
<td>32.0%</td>
<td>44.0%</td>
<td>43.5%</td>
<td>47.0%</td>
</tr>
<tr>
<td>Individual non-task orientated</td>
<td>1.5%</td>
<td>0.5%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>0.0%</td>
<td>1.0%</td>
</tr>
</tbody>
</table>
each child individually by what we write back to them.” As teachers engage with the students, the students’ participation changes and their development of understanding increases. The experiences “allow you then to make them take ownership of their education and their role in the room.” That is, through apprenticeship of learning, students experience development which facilitates an efficacy where they gain more control or come to internalise and build on their learning experiences. What they are learning in the present they are then able to accomplish alone in the future (Vygotsky, 1978).

When working in groups with students, teachers provided cognitive challenge that supported a mentoring or apprenticeship of learning approach to interactions. Each teacher used scaffolding (teacher 1, 38.9%; teacher 2, 42.9%), shared problem-solving (teacher 1, 28.6%; teacher 2, 18.4%), and directives (teacher 1, 15.0%; teacher 2, 33.7%) to assist students during learning activities.

A guiding relationship with students was important to the teachers. Facilitation of learning was encouraged through scaffolding interactions. Cognitive challenge was initiated and maintained through participation in knowledge construction and understanding (Ussher & Gibbes, 2002; Vygotsky, 1978). Teachers cognitively challenged students then provided cues and feedback that were gradually withdrawn as the student became more capable (Rogoff et al., 2003). This experience is necessary for students to obtain the ability to come to a comprehension of the learning experience (Wood, Bruner, & Ross, 1976). That is, assisting students to complete activities that could not be achieved alone, or through providing scaffolding support to facilitate students’ learning experiences (Vygotsky, 1978). Through interactive opportunities to share in cognitive challenges or shared problem-solving, the students were able to participate in the activities with the teacher to come to informed conclusions and knowledge construction (King, 1991). Both teachers used scaffolding and shared problem-solving to provide students with the opportunity to create a shared understanding and informed conclusions.

The teachers also used directives to move the students towards completing group activities. This approach to classroom interactions is considered to be a fundamental approach to supporting communication. Providing directives is a necessity to ensuring interactions run smoothly and are a basic approach to assisting students in group activities (Shachar & Sharan, 1994).

Interestingly, teacher 1’s students were more cooperative. This teacher used more problem-solving techniques with the students, while teacher 2 used more directives with the class. This could have resulted in teacher 2’s students working more individually on tasks as they were...
being directed in procedures to complete tasks rather than being apprenticed through problem-solving activities.

Outcomes from the study suggest that teachers perceived students as needing expert guidance and apprenticeship to provide academic learning opportunities. This experience did take place in the classroom when teachers interacted with students on a one-on-one basis. However, this activity tended to limit interactions between peers in group learning experiences. As a result, when students did not have opportunity to interact with the teacher their focus turned to working individually. This result is reflected in Johnson’s (2003) idea that the structure of group goals determines interaction patterns and outcomes for each group member. When students worked individually they saw no connection with others in the small group setting. That is, the opportunity to scaffold and problem-solve together without teacher input was lost (see Figure 1). There was no opportunity for mentoring or apprenticeship between peers that could have taken place if small groups were structured to provide maximum social interaction, cognitive challenge, and development of a shared understanding.

When students work in a cooperative fashion with peers, however, there is opportunity for members to work together and help each other. Each group member is required to contribute to group interactions to reach the objectives of the group. The requirement of structure to group interactions includes positive interdependence, personal accountability, promotive interactions, social skills, and group processing (Johnson & Johnson, 1999b). When students are placed in structured groups they tend to exert more effort to help each other and achieve positive academic experiences (Johnson & Johnson, 1999b).

**CONCLUSION**

In conclusion, students did receive positive input from teachers that provided learning outcomes due to the high amount of teacher-to-student cooperation supported by scaffolding and shared problem-solving. However, to achieve opportunity for greater learning experiences, teachers might need to structure group activities in such a way as to set up accountability between students, thus enabling students to help each other. When this action is addressed, more positive learning opportunities could be experienced by those students in structured group situations.

Nevertheless, this pilot study does have limitations. The research was conducted over a limited period of five weeks. An extended period of research would provide more substantial results. A total of six students with learning difficulties from two classes at one school were observed for this study. Inclusion of a greater number of observed students with learning difficulties would add strength to these findings. The study
focused on the interactions between teachers and students. Future research is needed into the investigation of academic outcomes of students in this area. Coding of cooperative behaviours did not distinguish between teacher-to-student and student-to-student interactions. This aspect will be addressed in the study to follow where coding sheets will provide exclusive categories.

The major 20 week study to follow will address these concerns. Observations of 8 teachers and 24 students will be made at 4 schools in a similar fashion to that of the pilot study. Coding sheets will be edited to include exclusive peer cooperation and teacher cooperation categories for student behavioural interactions. A 5 week intervention training program will follow initial observations and teachers will be trained in inclusive, cooperative group activities. Finally, observations will be continued after the teacher training phase to determine if any changes have taken place in group learning activities for the students and the teachers. It is envisaged that teachers will take on those practices that are most helpful in providing inclusive classroom opportunities.

REFERENCES


Thank you on behalf of the NSW Chapter to the following guest reviewers in 2005. We value your thoughtful feedback.

**LORRAINE GRAHAM**
**GORDON LYONS**

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**OUTSTANDING REVIEWER**

The following reviewer has provided the journal with exceptional levels of insight and prompt return of papers and comments. Our sincere thanks on behalf of the NSW Chapter and readership.

**TONY SHADDOCK**

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**GUEST REVIEWERS**

Thank you on behalf of the NSW Chapter to the following guest reviewers in 2005. We value your thoughtful feedback.