



THE ROLE OF ACTION RESEARCH IN LEARNING SUPPORT: A CASE STUDY

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ABSTRACT

This case study investigates the cyclical nature of action research and its impact on in-class learning support. It illustrates the implementation of action research in a single classroom environment as a method for promoting teacher learning and improving outcomes for a student with learning and behavioural difficulties. In-class support encouraged greater understanding of the context in which students with learning and behavioural difficulties operate, and the culture of collaboration that emerged had a positive impact on the regular class teacher and the learning support teacher.

Action research is a valuable approach that facilitates improved teaching practices and promotes productive learning environments. It enables the teacher to understand what happens in the classroom and enhances the probability that a given curriculum, instructional strategy or technology will improve student outcomes (Mills, 2000). It helps identify the critical moments in the learning process and the point at which the teacher should intervene to

facilitate this process (Nixon, 1981). Teachers are able to respond more sensitively to student need in terms of their classroom interactions and curriculum planning. Action research can empower teachers and results in a greater willingness to take professional risks (Ross, Rolheiser, & Hogaboam-Gray, 1999).

Action research is defined as a "systematic inquiry done by teachers (or other individuals in the teaching/learning environment) to gather information about and subsequently improve the ways their particular schools operate, how they teach and how well their students learn" (Mills, 2000, p. 21). It is referred to as a "process of change which recognises that teaching and learning take place between and among people, therefore the emphasis is on collaboration" (Spedding, 2001, p. 421). It is evident from these definitions that the collaborative and participatory nature of action research is central to the process.

The action research process goes beyond reflecting on teaching practice — it is acting on that reflection. Often teachers make

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observations, record their findings, but fail to make changes to their teaching practice (Westwood, 1999). Action research is a planned inquiry resulting in reflection and subsequent change. It is a systematic process in which teaching strategies are recorded and behaviours are adapted as a consequence of research findings (Wadsworth, 1998). This should result in steady and continuous improvements in teaching practice.

It is obvious that action research is a useful approach for many teachers, but its role for learning support teachers is less well documented. In the context of moves towards more inclusive education, the collaborative and participatory characteristics of action research may provide a significant model for collaboration between general classroom teachers and specialist teachers who provide support for students with special educational needs. Moreover, action research reinforces the value of teachers' own experiences, insights and activities and promotes the development of more inclusive schools by building the capacity of the teaching workforce to respond to student diversity (Thomas & Glenny, 2002).

All Australian State education authorities now provide specialised support services for teachers in regular classrooms, although the models of support vary from state to state (Cowley, 2001). Learning support teachers may find themselves in a variety of roles, which range from working exclusively with teachers in professional development activities through to intensive work

with students with special needs, in individualised, small-group, in-class or withdrawal settings (Bailey, 2001). Regardless of the type of educational setting, however, it is a consistent finding that collaborative contexts for teacher support improved academic outcomes, not only for students with special needs, but for all children (Schmidt, Rozendal, & Greenman, 2002).

When collaborative consultation is viewed as a problem-solving process as well as a service delivery model, a range of flexible instructional strategies are likely to emerge to maintain students with special educational needs in the regular classroom (Spedding, 2001). If the problem-solving process is extended to involve planning, systematic intervention, formal recording of outcomes, collaborative reflection and preparedness to change actions in response to the reviewed outcomes, in a cyclical fashion, then the process has become one of action research (Wadsworth, 1998).

This approach contrasts significantly with an alternative view of "collaboration" in which the general and learning support teachers agree to "work together" to manage the class by dividing the class into regular and remedial student groups. The learning support teacher withdraws the students who require special educational strategies into a resource room on a regular basis and essentially provides "relief" for the regular class teacher. This approach is supported by the attitudes of many general class teachers who believe that they lack appropriate specialist training, and that the instruction of

students with special educational needs is best managed by specialists in resource rooms (Shade & Stewart, 2001).

When students receive intensive, individualised instruction through the withdrawal approach, their academic outcomes improve, but as the size of the withdrawal group increases, there has been shown to be little improvement in academic outcomes (Moody, Vaughn, Hughes, & Fischer, 2000). A comparison of students with learning disabilities in inclusive and withdrawal programs found that students associated with the inclusive program earned higher grades, and attended more days of school than comparable students in the withdrawal program (Rea, McLaughlin, & Walther-Thomas, 2002). Placement in special classes was also shown to have insignificant effects on learning outcomes in a meta-analysis of traditional special education interventions (Forness, Kavale, Blum, & Lloyd, 1997). Moreover, the resource room is largely associated with the traditional remedial centre and a negative stigma attaches to that environment (Westwood, 1997). It is also evident that such an approach probably does not provide the regular class teacher with insights to the instructional strategies appropriate for the students with special needs, and it is therefore unlikely that any improvements in student learning will be sustained in the regular class environment.

The implementation of in-class support by the learning support teacher for students with special needs within an action research framework is proposed to have several advantages. The stigma attached to student withdrawal from the

classroom is removed (Moss, 1996). The class teacher is less likely to resist change imposed by the "outsider" and collaborative problem-solving results in a higher level of shared responsibility (Jones & Charlton, 1992). The consequences of implementing particular strategies are more likely to be evident, and this may lead to greater flexibility and willingness to change teacher practices in more effective directions (Vaughn, Klingner, & Hughes, 2000).

On the other hand, there are many barriers that arise when attempting to work collaboratively which may negatively affect in-class support. Barriers identified from reviews of research (Spedding, 2001) and studies of teacher practice (e.g., Poon-McBrayer, 2000) include a lack of clarity regarding the roles of team members, lack of available time and over-extension of teachers, the credibility of special educators, conflicting ideas and personal agendas, the age of participants, lack of experience, unwillingness to communicate and inflexibility.

However, the action research approach promotes a collaborative process among teachers that is professionally transparent because of its reliance on agreed strategies and empirical measures of outcomes rather than personal attitudes. With the added advantage of having the potential to improve delivery of in-class support, it offers significant assets to special educators seeking to promote more inclusive approaches in an evidence-based manner. The purpose of this paper is to illustrate the implementation of action research in a single classroom environment as

a method for improving learning outcomes for a student with learning problems and behavioural difficulties. The cyclical nature of action research is demonstrated and the impact on the learning support teacher, class teacher and student outcomes is reported.

METHOD

There are a number of different action research models that share common elements. The framework in this study was based on Grundy's approach (1995), which identifies the elements as *reconnaissance, planning, acting, collecting evidence* and *reflecting*. The process is more explicit than the normal daily practices of teaching, and when the collected evidence and reflective processes lead to further planning and revised actions, then the process becomes cyclical and should lead to incremental improvements in teacher strategy and student outcomes.

Participants

The study was conducted in a non-government primary school located in a middle-class suburb of Perth, Western Australia. Collaborative consultation between the learning support teacher, the Year 4 class teacher, and the school principal led to the selection of Adam (a pseudonym) for in-class support because of his long history of inappropriate behaviour. At the time of the study, Adam was eight years and ten months old with a history of disruptive and aggressive behaviour that had impacted negatively on his learning. He was an only child and lived at home with his mother, who had recently remarried. His mother was generally supportive of the school approach, but found Adam's behaviour difficult to manage. In

Year 3, Adam had been diagnosed as having "deficits of executive function" by a school psychology service and had been medicated with Dexamphetamine for a short period. Teachers reported that this was associated with considerable improvements in his behaviour. However, his mother had decided to discontinue the medication and Adam's behaviour in the Year 4 class was very disruptive and aggressive.

The learning support teacher (second author) was undertaking a Master's degree in Special Education and approached the school principal for permission to undertake a major case study within the school that would be documented and accredited as part of her postgraduate study requirements. This teacher had four years' experience in secondary education and then had made the transition to primary education following a retraining program undertaken at a College of Education. Her subsequent master's level studies included units in Special Education and in this context the request was made. The learning support teacher was already an employee of the school on a part-time basis and had been team-teaching the class that contained Adam and a number of other students with learning and behavioural difficulties. Following agreement from the class teacher and the school principal, the learning support teacher consulted with her university staff mentor (first author) and nominated an action research approach to address Adam's learning and behavioural difficulties.

The Year 4 class teacher had been appointed to the school at the beginning of the school year and she was experienced in general

primary classroom instruction. She agreed to participate in the project because she had already established a working relationship with the learning support teacher and because she acknowledged that the class was challenging due to the presence of a range of students with learning and behavioural problems.

Setting

The first decision, to locate the intervention program within the regular classroom, arose from discussion between the class teacher and learning support teacher regarding the most appropriate situation for action. Initially, the learning support teacher was hesitant about an in-class location, due to the high level of disruptive and noisy behaviour exhibited by others in the class. However, she agreed to undertake this option because an action learning approach enabled ongoing evaluation of the progress of the study. Thus, if the classroom learning environment proved to interfere with good progress, this should be reflected in outcomes and could be discussed subsequently with the class teacher. A table was set up at the back of the classroom for one 60-minute lesson, one day per week for five weeks.

Cycle 1

The first stage, *reconnaissance*, involved seeking information about Adam in the classroom context, and seeking information relevant to his needs from the literature. Information on Adam's learning and behaviour was gathered from a number of sources, including his school file, talking to previous teachers, samples of his work, talking to the class teacher, class

observations and recordings of his classroom behaviour. An analysis of Adam's previous school reports, samples of his writing, reading observations and Adam's profiles on the Reading Developmental Continuum (Education Department of WA, 1997) and Writing Developmental Continuum (Raison, 1997) indicated that he had difficulty with many tasks. These included:

- integrating and organising complex information;
- understanding a given task;
- staying on-task and completing given tasks;
- getting motivated;
- decoding new words;
- understanding what he reads;
- writing stories and sequencing his ideas;
- using correct punctuation;
- spelling words;
- expanding his vocabulary.

Teacher observations of Adam's behaviour indicated that he was off task, talked out constantly, was out of his seat and touched his neighbour frequently. An analysis of reports by previous teachers and observations of his behaviour in class resulted in the following behaviour profile:

- Adam's behaviour is unpredictable.
- He regularly hurts other children.
- He verbally abuses both peers and teachers.
- He intimidates other children, causing anxiety and tension among his peers.
- He is defiant, often refusing to carry out instructions.

- He interrupts the teacher during direct instruction.
- He refuses to stop an inappropriate behaviour when directed.
- He regularly demands the attention of his peers.
- He touches others and frequently places his hands around their necks.

Both teachers were very concerned about Adam's poor literacy, particularly his poor writing output, and the significant impact of his disruptive behaviour on his learning and on the good conduct of the class. It was therefore decided to select one learning goal and one behavioural goal as the targets for the first cycle of the intervention. These decisions guided a selective review of relevant literature to assist in the next stage of *planning*.

Planning for writing is an extremely important strategy to improve the output of poor writers (Hess & Wheldall, 1999). It provides the student with a structure, which allows the writer to obtain an overview of the writing task from the start, resulting in logical sequencing and integration of ideas. Spelling, punctuation and syntax must also be learned as part of the writing process, and self-correction should be encouraged for the student to move towards independence in his/her writing (Jones & Charlton, 1992). Useful tools for teachers to introduce are advance organisers, such as pictures, outlines and paragraph clusters, that show the correct sequence of events, since most students with learning difficulties struggle to develop their own story line (Harwell, 1995). A writing intervention plan should include key

writing strategies, development of knowledge and understanding of the writing process, strategies for developing a positive attitude, and strategies for planning, organising and revising writing (Raison, 1994).

Planning to reduce disruptive behaviour was guided by consideration of a range of behavioural intervention strategies described in the literature, including response cost, time-out, the token economy, peer tutoring, school-home notes, self-regulation techniques and self-management techniques (e.g., Reid, 2001). Most research reports incorporate taking baseline measurements to establish the frequency of a particular misbehaviour and its severity, in order to monitor the student's progress within a given time frame (Rosenberg, Wilson, Maheady, & Sindelar, 1997). The positive behaviour that is to replace the negative behaviour must be stated. The behaviour targeted must not be too general and, in order to ensure success, it is preferable to target one specific intervention (Reid, 2001).

Students must be aware of the rules, know what they mean, how to act in acceptable ways, the consequences of breaking them and how to respond immediately (Harwell, 1995). Being brief when praising or reprimanding is essential, and immediate reinforcement for correct behaviour must occur (Mastropieri & Scruggs, 2000). Rewards should be evaluated every two or three weeks to determine their effectiveness and may be changed if necessary, while punishment, such as response cost, is introduced for failing to fulfil contractual demands (Reid, 2001).

The culmination of the second stage, *planning*, involved the development of an individualised education plan (IEP) with the goal of improving Adam's written output, and the development of a behavioural management strategy that was designed to reduce the frequency of disruptive behaviour. An IEP was drawn up based on an analysis of the Adam's needs and four short-term writing goals (Appendix A) were established. The aims were for Adam to develop a step-by-step planning approach to all writing tasks, use a framework for a writing task, use given cues and prompts to aid his writing, and edit his own work using an editing card. This was to be implemented in a small writing group of four pupils.

Table 1. Assessment Tasks and Assessment Criteria

Writing Assessment Tasks	Writing Assessment Criteria
Sequencing of sentences	Place events in a logical order
Prepared paragraph	Identify the main idea of the paragraph
Cluster procedure	Use cluster to link ideas to a topic sentence
Editing of prepared paragraph	Edit a given paragraph using editing cards
Individual conferencing	Discusses progress and problems

A set of assessment tasks and assessment criteria was also developed during the planning stage to enable the collecting of evidence which would inform the acting and reflecting components of the action research cycle. With respect to writing, the tasks and criteria were linked closely to the

goals, as evident in Table 1. A spelling analysis and an analysis of Adam's editing skills were completed at the end of each writing session, the results recorded and the outcomes used to help determine the focus for the next lesson.

The aim of the first behavioural goal was to set up a contingency system that would encourage Adam to refrain from interrupting lessons while seated with the other children on the mat at the front of the room. The regular class teacher identified this goal as one that had a high priority because "Mat-time" was an important aspect of whole-class activities and Adam's disruptive behaviour had spoiled many important opportunities for class interaction and discussion. The initial strategies involved explicit teaching and modelling of expected mat behaviour, to be carried out on Wednesdays while the learning support teacher was taking the whole class for the day.

An instrument to assess Adam's behaviour on the mat with the class was devised, based on frequency per hour. Every Wednesday over a period of seven weeks, Adam's behaviour was recorded. The behaviours selected for assessment were "not listening", "talking out", "inappropriate behaviour", "hurting others" and "out of seat without permission". Adam's behaviour was noted on a recording sheet over a period of an hour. Disruptive behaviour was coded each time a behaviour occurred throughout the hour. A record of his behaviour during the four writing lessons was also implemented to measure the extent of appropriate behaviour in this second setting.

The two aspects of stage three, *acting on the writing plan* and *acting on the behaviour plan*, were implemented by the learning support teacher within the regular classroom. The writing plan was implemented at a small table at the rear of the classroom with four boys, including Adam, who would all benefit from guided instruction to improve their writing outcomes. Keeping Adam on task was identified as a key strategy to improve his work in the writing group, and this was achieved by breaking down the writing task into smaller steps. Each step completed was reinforced with rewards that were frequently changed to maintain interest. The tasks were designed to suit Adam's ability and guided practice preceded individual practice. Pictures were used to encourage the development of a story line. Productive routines were established to encourage feelings of security and control for the students over their learning environment.

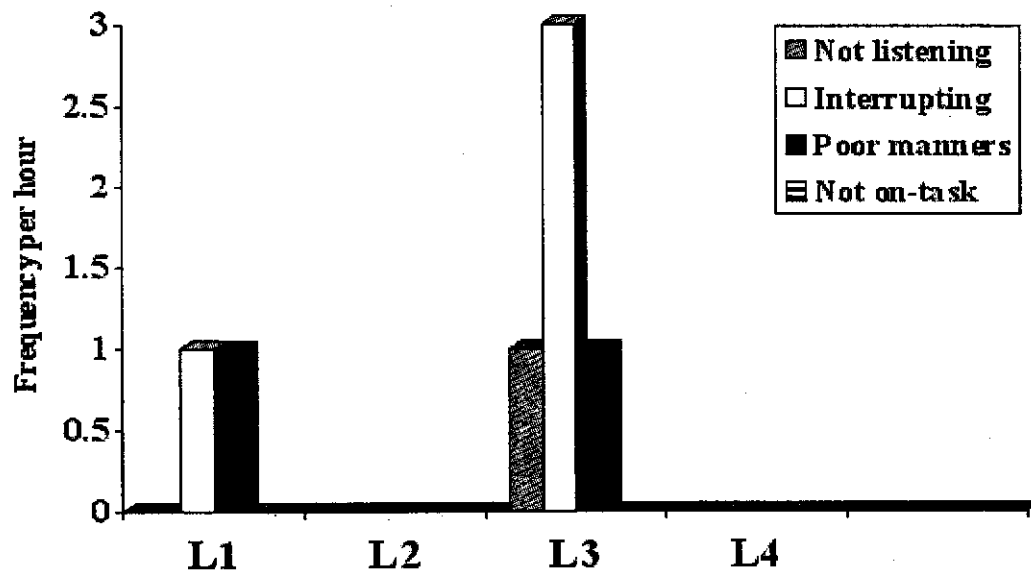
The learning support teacher acted on the behaviour plan for Adam in the context of managing the whole class on Wednesdays. She was obliged, by school policy and also as a professional courtesy, to implement the regular class teacher's general management strategies when teaching the whole class to maintain continuity. These strategies included a token economy system, time-out (after three warnings Adam was sent out of class) and a task card (each completed task had to be acknowledged in exchange for 10 minutes' free time).

In the fourth stage, *collecting evidence*, teacher analysis of Adam's writing showed that his ability to sequence ideas and to write story

paragraphs began to improve after four one-hour lessons at weekly intervals. Adam gained confidence in his editing skills, and was able to identify most of his spelling errors, capital letters at the beginning of sentences and missing full stops. He still demonstrated incorrect placement of capital letters in the middle of words or sentences. It also became evident that his story writing ability was limited by his restricted range of vocabulary and spelling ability. More seriously, Adam's behaviour in the small group continued to be disruptive, with two of the four lessons marked by persistent inattention, frequent interruptions, shouting and swearing (see Figure 1).

These teacher observations of Adam's behaviour, recorded during and after each hour of the in-class remedial session, were confirmed by the evidence from the frequency records of disruptive behaviour elsewhere in the classroom. Adam's recorded behaviour over a period of an hour each Wednesday for seven consecutive weeks revealed a persistent pattern with no evidence of improvement. The most frequent and persistent behaviours were his inability to listen when reprimanded, inappropriate behaviours (e.g., putting his hand around a peer's neck, swearing), talking out and hurting others. In fact, on three of the days, Adam was removed from the class for the remainder of the day for hurting a peer (see Figure 2).

Further problems developed as the impact of the selected classroom management strategies started to emerge. The token economy operating



L = Writing Lesson

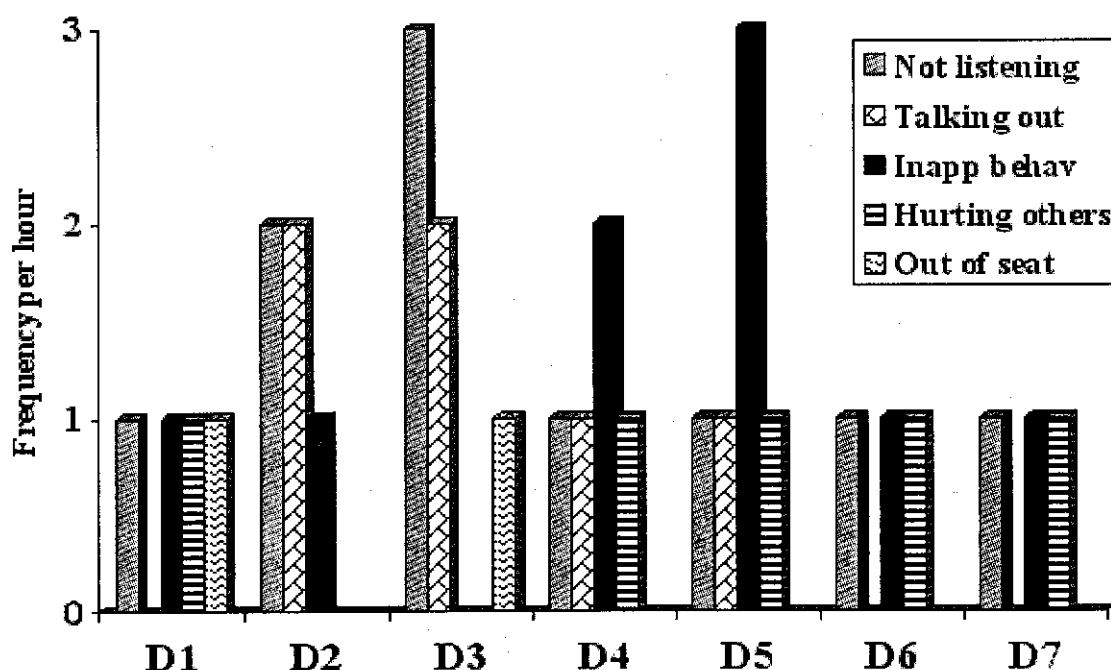
Figure 1. Frequency of Adam's behaviour in the writing group

in the regular classroom had a net negative effect on Adam, as he was constantly being fined for inappropriate and off-task behaviour. As a result, the class teacher stopped using this system. The time-out strategy resulted in Adam spending too much time outside the classroom. The task card also emphasised Adam's poor performance. The combined effects of these approaches were overwhelmingly negative, since Adam's dysfunctional behaviour either excluded him from the rewards or drew attention to his misconduct.

The class teacher then tried to solve the problem by adopting a range of management strategies that varied from week to week. This created a classroom environment that was unpredictable from the students' perspective, and some other students began to mimic Adam's behaviours. The action research process, which had drawn explicit attention to the systematic

implementation of behaviour management strategies, and the collected evidence of Adam's continuing disruptive behaviour over five weeks, eventually led both teachers to the undeniable conclusion that the program to improve Adam's outcomes was not effective. The most encouraging feature of this conclusion was that it arose from the shared engagement and reflection on the action research process. This was a refreshing alternative to options, such as blaming the student ("he's uncontrollable"), blaming the other teacher ("she's incompetent"), or blaming an external factor ("the home situation is very difficult"). Unfortunately, matters then took a dramatic turn for the worse, and Cycle 1 came to an abrupt end.

Turning point: Adam lost his temper after a particular incident and threw two chairs against the classroom wall in frustration and anger. The students were not in the class at



D = Every Wednesday over seven weeks

Figure 2. Frequency of Adam's disruptive behaviour in class

the time and the class teacher was absent for three days; the learning support teacher was providing relief teaching for the whole class. This act clearly illustrated that the safety of the students in the class was at risk. The learning support teacher was very distressed by this incident and discussed the program and her wider duties of care in consultation first with the school principal and then with her university mentor. The severity of the incident prompted the principal to involve the whole school staff and to seek additional external support in managing Adam's behaviour and protecting the other children in the class.

A meeting of all stakeholders was set up and, for the first time, the principal became aware of the full extent of learning and behavioural difficulties in this particular classroom. A non-

government school consultant was called in to help the class teacher identify the needs of all the students with learning and behavioural difficulties in her classroom. Adam was placed on a behaviour program for the second term that was administered in partnership with a neighbourhood community-based child development clinic. It was agreed that if Adam's behaviour did not improve after three warnings, the school would contact a clinic health officer who would come and remove him from the school grounds. Adam would be given positive behavioural training at the clinic for the remainder of the day and would then return to school the following day. The learning support teacher and the class teacher agreed to reflect on their experience and to plan a second action research cycle with a higher probability of success.

Cycle 2

The learning support teacher reflected on the outcomes of the first cycle with her mentor and acknowledged that the story-writing goals of the initial IEP had been too ambitious in view of Adam's learning difficulties; and that Adam was experiencing little success and receiving very few of the rewards available to the participants of the small writing group. This led to insight, on the part of both the class teacher and the learning support teacher, that Cycle 2 of the action research process should focus on introducing high rates of reinforcement for improved behaviour, and that improving Adam's spelling was an aspect of story writing that could be manipulated to achieve a higher probability of success. In addition, it was realised that the frequency of in-class supported intervention needed to be increased from one day to three days per week (five days were not possible, but three days were better than one). The school principal supported the adjusted IEP goals and the increased intensity of the program. The teachers embarked on the reconnaissance stage of Cycle 2, to identify strategies to improve Adam's spelling and to assist him to develop more positive behaviour.

The reiteration of the *reconnaissance* stage focused on spelling research, which emphasises that one way for students to improve their spelling is to correct their completed writing immediately (Baker, Gersten, & Graham, 2003). However, students like Adam who have a limited vocabulary tend to use only the words they can spell correctly. This is an adaptive strategy in

the short term, since it ensures that the student at the very least avoids teacher criticism, and may even receive praise for error-free writing, but it restricts the scope of writing in the longer term. One solution is to introduce a systematic method for expanding written vocabulary and the 500 Most Commonly Used words was identified as an appropriate resource (Harwell, 1995). The 500 Most Commonly Used Words list has been designed to enable students with learning difficulties to reach a minimum literacy level.

The selective review of the remedial spelling literature also revealed the importance of error analysis. Before devising an appropriate spelling intervention plan, samples of the student's writing must be analysed in order to determine the nature of errors (Traill & Symes, 1995). This gives insight to the spelling development that has been achieved, since phonetic spelling errors (e.g., "skool") reflect more advanced awareness of spelling structure than random arrangements of letters (e.g., "scloh") or spelling without vowels (e.g., "skl") (Prior, 1996).

Spelling intervention strategies recommended in the literature (Westwood, 1999) that were included in the second phase of the case study were:

- developing a word box with index cards which the student files alphabetically once they can spell the word;
- closure exercises that require the student to fill in the blanks in a sentence using words from the word box;

- Look-Cover-Write and Check study strategy;
- dictation that includes words currently being learnt and playing spelling games;
- writing the new words on flash cards and asking the student to think of ways they can remember the word using memory keys;
- explicit teaching of the spelling rules;
- severing the word into fragments (syllabification).

Particular attention must be given to the details of letters and phonemes, to spelling rules and to checking written words. "Simultaneous Oral Spelling" is a combined approach that uses auditory, visual and kinaesthetic strategies to improve spelling (Prior, 1996). To implement an appropriate spelling program, a dual approach was used that focused on auditory and visual strategies to teach the 500 Most Commonly Used Words (Harwell, 1995).

One successful approach to achieve long-term positive behaviour is the strategy identified as Positive Behavioural Interventions and Supports (PBIS) (e.g., Sugai & Horner, 2001). However, unlike the US, where the federal Individuals with Disabilities Education Act (IDEA) mandates the implementation of such approaches for students with a history of challenging behaviour, Australian schools lack the imperative to introduce school-wide preventative approaches. The dearth of professional development programs for Australian educators to develop

the skills associated with the implementation of PBIS has been noted (Arthur, Bruveris, Smith, & Stephenson-Roberts, 2002). The learning support teacher and class teacher recognised that they needed to plan a more positive learning environment for Adam, and decided to focus on teaching the social skill of cooperation with a peer, during the story writing/spelling small group lessons. They chose to work with the six-step intervention program recommended by Westwood (1997): describing the skill to be taught, modelling the skill, student imitation of the skill, teacher feedback, provision made for practising the skill and continuous fading to intermittent reinforcement.

The *planning* stage of Cycle 2 led to the development of a second IEP, in which three short-term spelling goals and one behavioural goal were outlined, targets were established and resources for implementation and reinforcement were marshalled (Appendix B). A set of assessment tasks and assessment criteria were developed to meet the spelling goals (see Table 2).

To assess the effectiveness of the intervention to improve cooperation, Adam's behaviour was observed while participating in spelling games with a peer. Consistent with the partnership with the community-based child development clinic staff, it was agreed that Adam would continue to be removed from the school for the rest of the day after receiving three warnings for inappropriate behaviour.

Table 2. Spelling Assessment Tasks and Assessment Criteria

Assessment Tasks	Assessment Criteria
Dictated sentences	Edit dictated sentences using editing card
Read flash cards	Read and discuss the patterns in words
Closure activities	Use word box to complete the sentences
Bingo game	Read and identify the words called out
Spelling tests	Spell the words given the day before
Individual conference	Discuss progress and problems
Index card filing	File words in alphabetical order
Word endings sheet	Fill in the word ending read out
Run Cat Run spelling game	Fill in the short sounding vowel
Ladder Tree spelling games	Fill in the missing vowel to make a word
Pork's Problem spelling game	Cover Pork's spots using a word from the same "family"

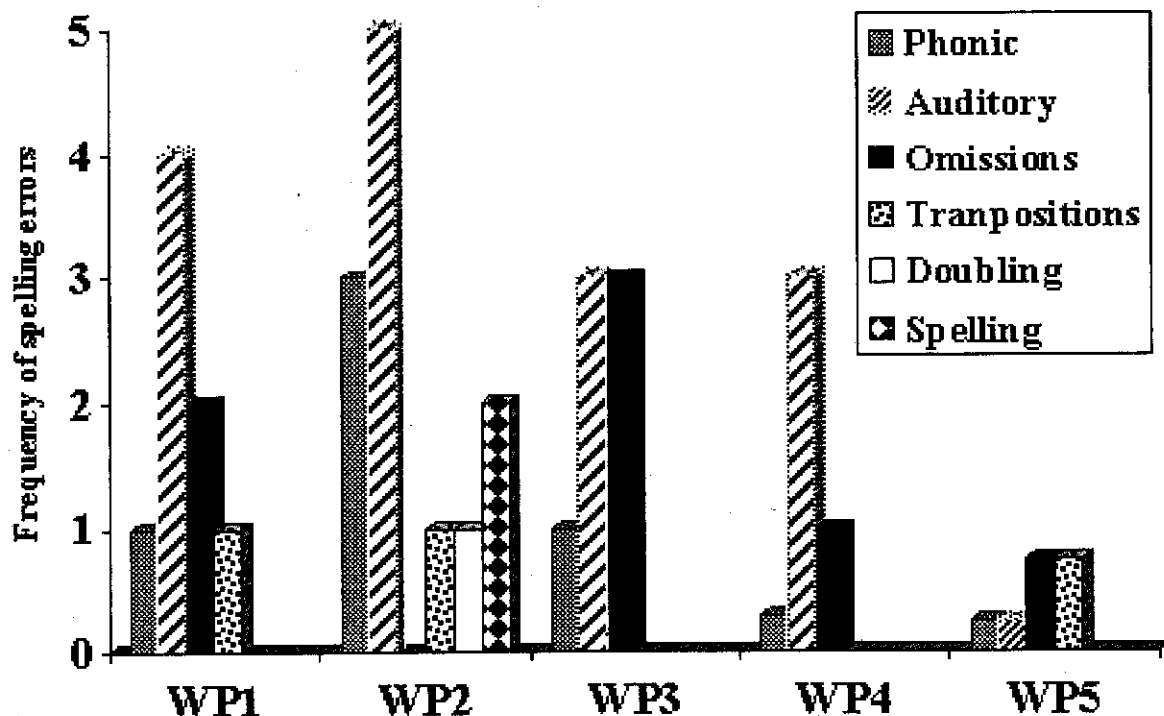
The two aspects of stage three, *acting on the spelling plan* and *acting on the social skill plan*, were again implemented by the learning support teacher as an in-class strategy for a small group of students. The small group lessons took place at the back of the classroom on three days per week, for 45 minutes per lesson. The implemented action involved a number of steps:

- Application of teaching strategies for the spelling group.
- Application of spelling and social skills measuring instruments.
- Application of assessment tasks and criteria.

The teaching strategies consisted of a number of small, manageable tasks appropriate to each student's level of spelling development, pre-determined by error analysis of each student's spelling. Time-on-task was maximised and verbal instructions were kept to a minimum. Index boxes and spelling games were used to make learning more authentic and enjoyable. The number of tasks increased together with the reinforcement schedule. Rewards were given for completion of each step and the rewards were reviewed and changed frequently. The interactive teaching approach was applied when introducing new words on flash cards to enable each student to determine personalised ways of remembering sight words.

The cooperative learning approach was used during spelling games to increase the opportunities for positive student interaction. Social skills required for each game were explicitly taught, modelled and imitated. Each student's progress was monitored and changes were made to the program accordingly. In this way, the social goal of cooperation was modelled and reinforced for Adam without drawing excessive attention to his particular problems.

The spelling intervention records established to *collect evidence* indicated that Adam attended



WP = Written Paragraphs

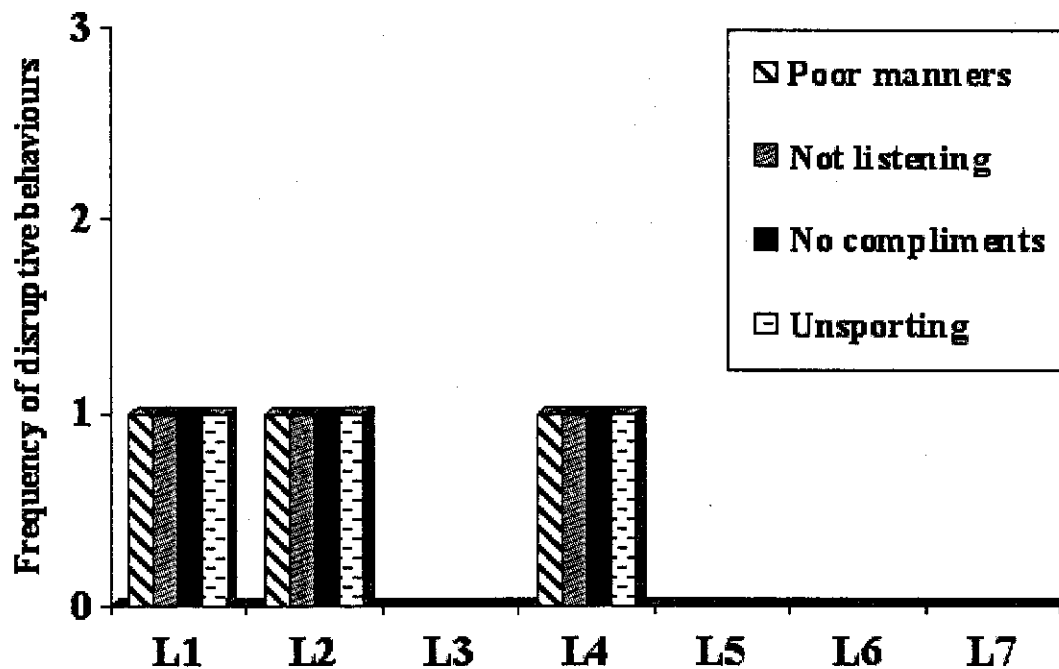
Figure 3. A comparison of Adam's spelling outcomes in Written Paragraphs during the first four writing lessons and the final story written at the conclusion of the spelling lessons (WP5)

seven of the nine spelling lessons that were interwoven with story writing activities. By the conclusion of the lessons, Adam was demonstrating the effective writing of a story with a beginning, middle and ending. Adam's spelling was analysed according to the following categories of errors: reasonable phonic alternative, auditory confusion, omissions of one or more letters, transpositions where the letters are correct but in the incorrect order, incorrect doubling of a letter and words incorrectly spelt that are unclassifiable. Figure 3 indicates Adam's spelling progress in his writing.

The number of auditory, phonic and omissions spelling errors decreased considerably. The number of words in his story increased from

27 in the first to 91 at the conclusion of spelling lessons, evidence that his success in spelling contributed to a growing confidence in story writing. Adam's editing of his final paragraph indicated that he did not automatically use the correct punctuation, but consistently identified his errors when editing his work.

Evidence of the development of cooperative behaviour was inferred from measuring changes in inappropriate behaviours during the eight minute game played with a peer: poor manners, not listening, not given compliments and not being a good sport. The frequency of disruptive behaviour was coded during the eight minute spelling game. Adam's social skills outcomes are recorded in Figure 4.



L = Social skills lesson

Figure 4. Social skills outcomes during the 8 minute spelling games

Adam's behaviour was appropriate in the third, fifth, sixth and seventh weeks of playing spelling games, indicating that the game strategy led to a reduction in challenging behaviour and that he was able to complete a spelling game with a classmate, which was quite an achievement.

To meet university requirements for submission of major projects, the learning support teacher ended the formal case study after seven weeks of the second cycle. By this time, Adam's spelling and story writing had improved and his social behaviour within the small group had improved. His behaviour in the wider school context was variable, and the involvement of the community-based clinic continued until the end of term.

The learning support teacher *reflected* with her university mentor that the action learning approach had caused her to be much more systematic in her data collection and analysis of student progress than would be her normal pattern. She had become convinced that in-class support was essential because it enhanced the working relationship between the learning support and class teachers, and encouraged the class teacher to observe the intervention processes. The class teacher reflected on her changed attitudes towards intervention programs for Adam, whom she had previously judged to be a very difficult child who was unlikely to respond to her strategies. The two teachers concluded that observational learning was more compelling as

a form of professional development for both teachers than attendance at staff meetings or off-campus professional activities.

CONCLUSION

This study confirms findings from previous research showing that action research contributes to local educational knowledge (Bednarz, 2001; Mills, 2000; Ross et al., 1999). The documented failure of Cycle 1 was evident to both teachers even before the dramatic incident that led to the intervention of the school principal and the child development clinic staff. The success of Cycle 2 within the classroom was reinforcing not only for the student but for the teachers concerned. They were both "shamed" by the incident in which Adam had exhibited such aggressive behaviour, and the action research strategy provided a framework within which they could plan a new strategy and observe its outcomes objectively. Ultimately, this two-phase cycle led to greater improvement in behavioural and academic outcomes for a student with learning and behavioural difficulties, and benefited the learning support and class teachers in their management and professional development.

In-class learning support provided opportunities to understand the context in which the student with learning difficulties operated, and gave the class teacher time to observe the program first hand and to assess the value of that approach. This provided opportunities for the class teacher to make suggestions to enhance the student's learning and encouraged the class teacher and learning support teacher to work together. Given that some staff members at Adam's school

believed that he should have been excluded from the school, collaborative support was essential for those committed to managing his problems within the regular classroom. In-class learning support differs from co-teaching in that the learning support teacher maintains responsibility for instructional delivery, monitoring, and assessment of a small group of students in a designated area within the classroom. In this way, the expertise of both types of teacher is optimised and each learns from the other.

The learning support teacher reflected that working collaboratively with the university mentor also provided valuable support of a different kind. It helped her to define and articulate situations as they arose, and assisted in the development of strategies, provided alternative ways of interpreting situations and evidence, and encouraged deeper analysis of perceptions and motivations.

The university mentor found the experience of participating in the weekly meetings with the learning support teacher to be both rewarding and frustrating. It was rewarding to observe the teacher insights gained as Adam's behaviour first deteriorated and then began to improve in response to the adjusted program of Cycle 2. It was frustrating to be aware of some of the inappropriate decisions taken by the teachers, particularly with respect to their neglect of the positive behavioural support approach. For example, the design and measurement of the behavioural management interventions were overwhelmingly based on negative behaviours, and it would have been much

more appropriate to record Adam's positive behaviours. This would also have been more consistent with strategies of positive behaviour support, but both teachers were insistent that the school required evidence that their actions were leading to a decline in the negative behaviours that were so problematic for Adam's classmates and other teachers. The mentor's decision not to intervene was based on her commitment to allow the action research cycles to be the source of teacher learning, and it was evident that the teachers had modified their attitudes and behaviours by the end of Cycle 2.

The decision not to intervene also raised ethical questions for the mentor. Was it appropriate not to intervene, when the indicators were that the interventions of the first cycle were too negative, too infrequent and very unlikely to succeed? Several factors guided the mentor's decision to stay committed to the action research pathway. One factor was that the school at all times held the duty of care for Adam and his classmates, and to have acted as if they were neglectful of this responsibility would have been presumptuous. The swift intervention of the principal when Adam's behaviour threatened to harm others demonstrated that indeed the duty of care was not taken lightly. The second factor that the mentor took into account was that direct intervention from an outsider would have contravened a fundamental premise of the action research process, which is that the experience of the participants is valued to guide the process, and is a crucial element in achieving longer-term change. To

have intervened would have disempowered the teachers, and undermined their confidence in developing procedures that would assist Adam (and potentially other students) beyond the short lifetime of this project. It would also have delayed the intervention of the principal and the development of a school-wide approach, which was a very positive outcome.

The challenges of relinquishing control as a university-based teacher/researcher have been articulated elsewhere, in the context of establishing participatory approaches to teacher development in "communities of practice" (Perry, Walton, & Calder, 1999). However, these challenges are to be contrasted with the far greater problem of the research to practice gap in special education. Greenwood and Abbott (2001) have suggested that the application of research findings to classroom practice is particularly slow because of the perceived limited relevance of educational research to practice, and the perceived failure of research to produce many innovations that are usable in real classrooms. If one proposed solution is to bring researchers and practitioners into closer working relationships, then the balance of power must be equitable and the partnerships must be genuinely collaborative.

Finally, it should be noted that the action research outlined in this report is very modest in scope. It did not seek to involve other members of the school community, and the parent, who was exhausted by her son's behaviour, welcomed the intervention but declined to participate

during school hours. However, the modest improvements in Adam's behaviour after such a long history of problems were noted by other staff and made a significant difference to the climate of his Year 4 classroom. The action research project provided a clear process, objective evidence and professional support to enable two teachers to improve their management skills in tandem. Most importantly, the regular class teacher took a cautious step towards accepting, rather than excluding, the management of a child with substantial learning and behavioural difficulties, and this represents an important forward movement in building more inclusive classrooms in partnership with special educators.

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Appendix A: IEP Cycle 1

Goal	Start Point (April 5 th)	Target	Personnel/ Resources
Sequencing of sentences	Has problems linking sequencing ideas	Sequence 6 sentences with 80% accuracy over 5 lessons	Teacher modelling Sequencing cards Reward stickers
Identify the main idea in a paragraph	Has no idea about what constitutes a paragraph	Identify the main idea in 3 out of 4 paragraphs	Teacher modelling Paragraphs Reward Stickers
Will write paragraphs using topic sentences	Finds writing difficult and does not sequence his ideas	Plan paragraphs using topic sentences, pictures and clusters over 5 lessons	Guided practice Picture cards Cluster sheet Reward Stickers
Will edit all his written work	Inconsistently begins sentences with capitals and writes capitals in words and sentences	Edit teacher's writing. Edit work using a checklist. Correct 80% of incorrectly written capitals	Teacher modelling Editing checklist Teacher samples Reward stickers

Appendix B: IEP Cycle 2

Goal	Start Point	Target	Personnel/ Resources
Improve sight vocabulary and spell commonly used words	Cannot spell the most commonly used words	Over 9 lessons learn 109 words from <i>500 most commonly Used Words</i> getting 18 of 20 correct	Guided help Index cards Closure activities Bingo cards Stickers
Write down a sentence heard orally	Difficulty writing oral sentences	Write 3 dictated sentences accurately	Instruction Dictation Stickers
Identify spelling patterns in words	Does not attempt to spell sight words or identify patterns or blends in words	Identify irregular spelling words. Use memory keys to spell them	Guided practice Hi-lighters Stickers
Work cooperatively with a peer	Cannot work responsibly with others	Work cooperatively with a peer for 8 minutes	Teacher modelling Spelling games

