The introduction of the Webster-Stratton Classroom Dinosaur School Programme in Gwynedd, North Wales: A pilot study

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Abstract

The Webster-Stratton Classroom Dinosaur School Programme was developed as a therapeutic intervention to teach social and problem-solving skills and to reduce behavioural problems in young children. It has subsequently been developed as a classroom programme for use in schools (Webster-Stratton et al., 2001a). In 2001 Gwynedd Education Service in North West Wales undertook a pilot delivery of the classroom programme in the reception class of one primary school. This paper describes the programme and the detail that went into ensuring that the plan would be effective. It also reports on some outcomes from the first year of the programme in one school, in terms of pre- and post-intervention measures of child behaviour and use of social and problem solving skills. Interviews were also conducted with school staff and parents and their perceptions of the programme's effectiveness are reported. Results demonstrated positive effects on academic performance, social and emotional development and reductions in behavioural problems. There was evidence that improvements had generalised to other settings, playground and home, and to other children in the school. The success of the programme in the first year helped to ensure the continuation of the programme, which is now in fourteen schools. The paper concludes with discussion of why the programme has been successful and describes the way in which the plan has evolved since this first year.

Introduction

Between 7 and 20 per cent of children have behavioural problems that meet clinical criteria for conduct disorder (CD) (Webster-Stratton & Hammond, 1998). These children exhibit both academic and social difficulties (Williams et al., 1997), find it hard to form social relationships and are often rejected by their peers (Coie, 1990). The prognosis for CD is poor and its long-term outcomes include mental health problems, unemployment, delinquency and drug abuse (Kazdin, 1985). Schools are reporting that children with both problematic behaviours and significant social skills deficits are increasing in number. It is important, therefore, to ensure that the early years' curriculum provides children with opportunities to learn the

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essential social, self-management and problem solving skills that will enable them to benefit from their education

Webster-Stratton’s ‘Incredible Years’ programmes are a series of three interlinked programmes for parents, teachers and children designed to promote ‘children’s social, emotional and academic competence’ (Webster-Stratton et al., 2001). The programme’s goals are to strengthen families by improving parenting skills, increase teacher competencies and home-school links, and develop children’s social and problem-solving skills in order to reduce antisocial behaviour. The programmes were initially developed as clinical interventions for children aged between three and eight, have been extensively evaluated and have strong evidence of effectiveness in reducing conduct problems (Webster-Stratton, 2000). More recently they have been researched as preventive programmes (Webster-Stratton et al., 2001b). They are one of only a small number of programmes to achieve ‘Blueprint’ status with the Centre for Violence Prevention at the University of Colorado as a result of their significant evidence base, their demonstrated long term effectiveness and their replication in service settings (Webster-Stratton et al., 2001).

There is now a strong training and support structure for professionals who want to deliver these programmes in the UK. The quality of implementation is important for success and the standardised training and ongoing support, as well as the detailed programme manuals and video aids, aims to ensure that programme providers understand and correctly implement the core components of these programmes that are necessary for success (Mihalic et al., 2002).

Webster-Stratton’s child programme, Dinosaur School, is a comprehensive social skills and problem-solving curriculum that teaches positive social and communication skills, conflict resolution and anger management, emotional and academic literacy and appropriate school behaviours. It also aims to promote positive self-esteem (Webster-Stratton, 2000). It was initially developed as an intervention for small groups of clinic-referred children with behaviour problems and was shown to be effective in reducing conduct problems and promoting pro-social behaviours in these children (Webster-Stratton et al., 2001a). In recent years the programme has been further developed as a preventative intervention for universal use in the classroom for children aged four and five and has been researched in classrooms in high risk ‘Head Start’ areas (Webster-Stratton et al., 2002).

Delivering the programme in school, with reception aged children, to the whole class helps to establish positive social behaviours from the outset and eliminates the problem of children being ‘singled out’. It also helps children to interact positively with their peer-group through the creation of positive feelings and a shared emotional vocabulary. A further advantage of the classroom programme is that pro-social children can model adaptive behaviours for high-risk children. Also, as teachers are delivering the programme, they can make use of the concepts throughout the school day and throughout the whole school.

**The Dinosaur School Programme**

Specific skill components are taught, including ‘how to do your best in school and follow rules’, ‘how to make and keep friends’, ‘how to solve problems’, ‘how to detect and understand feelings’ and ‘how to manage anger’. Child sized puppets ‘Wally’ and ‘Molly’ are children who talk about their feelings and problems and discuss what would be good solu-
tions. Negative feelings are viewed as clues that there is a problem to be solved. Children learn to become ‘feelings detectives’ and acquire an enhanced feelings vocabulary. The ‘Dina Dinosaur’ puppet is the headmistress of ‘Dinosaur School’ and visits to monitor progress and provide encouragement. Video vignettes are shown of the puppets and children modelling the process of trying to solve problems like those that children often encounter at home and at school. The video clips prompt discussion of effective strategies and children then practice these problem-solving skills. Problem solving principles are further reinforced through homework activities.

Throughout the programme, children’s pro-social behaviours are reinforced through praise and rewards. Problematic behaviours are reduced by removing reinforcing consequences either through ‘time out’ or by ignoring the behaviour. Proximal praise, i.e. praising the positive behaviour of someone near the target child, is used extensively to provide children with a model of more appropriate behaviour.

**The Gwynedd Classroom Dinosaur School Project**

In 1998 the first author introduced the Webster-Stratton parent and child programmes as clinical interventions for conduct problems in a Child and Adolescent Mental Health Service. The parenting programme has since been taken up across North Wales as a preventative intervention in ‘Sure Start’ centres. In 2001, following a presentation on the therapeutic small group Dinosaur School programme by the first author, Gwynedd Education Department decided that the classroom Dinosaur School programme would be introduced as a universal preventive early intervention in primary schools. A project steering group was set up and the first author was recruited to provide part-time advice, consultation and support to the project.

Teachers from two reception classes received three day of training from a member of Webster-Stratton’s team from Seattle and, in Autumn 2001, the programme was implemented in the reception class of the first school. The programme materials include lesson plans and activities for two forty minute sessions per week. The session is divided into a circle time in which home activities are reviewed, the new topic is introduced and discussed, vignettes (video clips) are shown and children role play/practice the skills introduced, initially in interaction with the puppet. This is followed by small group activities which include colouring, bingo and matching games and other activities based on the material introduced during the session. A classroom assistant and an assistant psychologist prepared the materials for the small group activity sessions, the home assignments and the weekly letters to parents. Teachers received ongoing support in their preparation for the programme from the first author. This included an introduction to the programme for all school staff, including teachers, classroom assistants, playground supervisors and canteen staff. This focussed on basic principles including labelled praise, proximal praise, praising friendship skills and stating instructions in positive ways (e.g. use a quiet indoor voice rather than stop shouting). This training helped to promote adoption of the ideas throughout the school. Once the programme had started the first author visited the school to observe Dinosaur School sessions and give feedback to the teachers.

The programme was introduced in the reception class of the first school, a small infant school in October 2001 and continued twice weekly until June 2002. Because the reception
class intake at the start of the year was unusually small (only six children), two year one boys with significant behavioural problems were included in the programme. As the year progressed a further three children enrolled in the reception class, resulting in a class of 11, but the later enrollees did not complete the evaluation measures. The Webster-Stratton Parenting programme: ‘Help your child to do their best in school’ was also offered at the school for the first time to parents of all children in the school.

Data were available for seven of the eight children who received the entire programme, four girls and three boys. Seven parents (one for each child) were also interviewed. Eight members of the primary school staff were also interviewed, the two teachers who had implemented the programme, another class teacher, two support staff who had worked with the programme children in the classroom and two other support who had no classroom contact with the programme children.

The programme was evaluated by comparing parental ratings of their child’s skills and behaviour before and after the programme. At the end of the school year, school staff and parents were interviewed about their perceptions of the programme and a qualitative analysis of their responses was undertaken.

Three parent report measures taken before the start of the programme and again six-month later are reported briefly. These were the Self-Control Rating Scale (Kendall & Wilcox, 1979); the Strengths and Difficulties Questionnaire (Goodman, 1997); and the Dinosaur School Questionnaire, designed to measure skills targeted by the programme (Hutchings, 2001). For further details of these measures, which have been used in studies undertaken by the Child Behaviour Project, see Hutchings and Nash (1997).

In the semi-structured interview used to interview school staff and parents questions were asked about all aspects of the programme. This included academic performance, social and emotional development, homework activities, specific programme units and generalisation of skills learned. The staff were also asked about programme support and advice, further training needs and views regarding programme continuance. The three parents that had also attended the parenting programme were asked about this. Any additional comments made by respondents were recorded verbatim and quotations are used to illustrate findings.

Results

Table 1 shows the scores on three parent report measures employed before and after the programme.

All seven children demonstrated improvements in skills and behaviour on at least one of the three measure post-intervention. Overall improvements were reported on 15 out of 20 (75 per cent) of the individual scores. Three children whose parents had also completed the parenting programme each showed improvement on all three measures.

The Self-control Rating Scale (SCRS)

The SCRC provides an indication of the degree to which a child’s behaviour can be described as self-controlled. Baseline and follow-up scores were obtained for six of the seven children (see Table 1). These showed a general improvement in the children’s self-
control, with five of the six children for whom the measure had been completed showing lower post-intervention. However, the improvements made by the group did not reach statistical significance.

The Strengths and Difficulties Questionnaire (SDQ)
The SDQ assesses the occurrence of particular behaviours that are associated with conduct problems. Pre- and post-course scores were obtained for all seven children. The Wilcoxon test revealed a significant difference in group pre- and post-intervention SDQ scores ($z = 2.0226$, $p < .05$). Five of the children showed an improvement and the other two showed no change from baseline.

The Dinosaur School Questionnaire
Parents were asked about their child’s use of 15 specific behaviours taught in Dinosaur School. The responses were scored as:

Always = 0;    Often = 1;    Sometimes = 2;    Rarely = 3;    Never = 4. Scores were obtained for all seven children. A reduction in the score therefore indicated an improvement. Parents of five children reported an increase in the positive behaviours encouraged at Dinosaur School. However, the results for the group did not reach statistical significance.

**Parent interview responses**
Of seven parents interviewed, five reported that they had seen definite improvement in a number of their children’s skills. Parents rated their child’s academic skills in terms of the influence of Dino School. Five parents reported improvements in their child’s vocabulary and attitude to School work.
'He seems happier, he’s able to get what he wants to say out – he’s less frustrated’ (1)

Five parents felt it was very helpful in improving interpersonal skills, self-control and self-esteem

‘He’s learned to control his feelings – he used to throw chairs and lash out but he’s learned respect and right and wrong’ (5)

Overall, parents reported there had been definite improvements in many of the skills taught, six reported improvements in ‘awareness of other’s feelings’ and four reported improvements in literacy, which they attributed to the programme. Five parents rated communication skills, compliment giving, apologising, chatting with other children and turn taking as improved.

‘she’s apologising a lot if she does things to upset her brother … on her own now, we don’t have to tell her anymore’

All seven parents felt that the information and support that they had received had been helpful and that home school links enhanced the effect of the programme. Four parents had observed their child using Dino School principles spontaneously at home.

‘he’s getting on with children better – instead of fighting, he’s mixing better’

Positive changes were reported to occur most often in children’s use of effective communication and self-control strategies.

‘He still gets upset when he’s told off … but he gets over things quicker and doesn’t have tantrums the same – there’s no throwing himself on the floor’

‘He counts to three when he’s angry and uses his ‘ignoring’ muscle when someone annoys him’

One parent thought that the programme would benefit other members of her family.

‘I think it would be a real benefit for older children of all ages … when you’re growing up there’s phases when you don’t understand things – it would be good for my teenagers’

Six parents would recommend the programme to other parents. One parent of a child with significant problems was enthusiastic but felt that her child needed more exposure to the programme:

‘I think it was really good but for him it wasn’t in-depth enough at home. Children with problems maybe need more time spent with them maybe an extra lesson or more a week … the more things are repeated the more they sink in’

Three parents who had children in the Dino classroom completed the parenting programme. When asked what had prompted her to attend and if she had found it beneficial one parent gave the following response:
‘I went for help on how to deal with children cos you don’t get many chances to get it. I told instructors there should be more classes like this. It is my main job and there is nowhere that helps you. You need a licence to drive a car but not to bring up children! It gave me so many ideas that helped. I liked the things they told us to do e.g. play and praise – I changed how I deal with the children and I enjoyed it a lot. It was nice to have exchanges with other parents and it certainly benefited .... we played more and I praised her more’

**School staff interview and questionnaire responses**

All school staff reported that they had observed positive changes in programme children during the year and several reported changes within the school generally. When asked about how it had impacted upon the social and emotional development of children, all school staff responded that it was ‘very helpful’ and that positive changes had been observed.

‘I feel they’ve taken on board social skills that they still wouldn’t know without the programme’

All staff reported that the programme was having a positive effect on the rest of the school

‘All the children are beginning to learn and use the principles’

‘They use the principles in play and when they talk to friends’

‘They co-operate more with each other, they’ve learned to avoid confrontations now mainly by staying away from the person they were having scrapes with’

‘The kids all know the Dino rules and are more polite to each other’

‘Compliment giving especially is spreading through the school, and even though its only implemented in reception class we teachers are using it in our classes too’

Six staff said that they believed that the school culture was changing, both in terms of the children’s behaviour and their own attitudes, which were more positive, calm and relaxed.

‘I think it’s becoming a happier school. The atmosphere is changing, the teachers are getting used to praising. It used to be ‘don’t do that!’ now its ignored and good things concentrated on ... the kids are taking more responsibility for their own behaviour’

‘Its changing staff definitely; the way we deal with problems that come up and it has given us different ideas e.g. reward charts; the kids try more’

‘Now we’ve found a way of dealing with the kids we don’t get as stressed out’

‘We’ve all changed our attitudes; it’s a bit hard to say because it’s only been a year but the signs are there’

‘It will be interesting to see what happens as more of the children in the school have passed through Dinosaur School’
Staff felt they had been well trained by the headmistress and the first author

‘It’s like driving a car you learn over the following months from experience but I think the training is necessary and very good’

Most emphasised the need for ongoing supervision to improve their knowledge and skills and seven of the eight staff interviewed were keen to receive further training in the dinosaur school programme.

‘We need to keep going over it – the skills, and expanding until it becomes second nature’

All staff felt the programme should be continued, expanded and developed.

‘It has become an integral part of the curriculum for early years and key stage one’

‘The way teachers have taken it on board means it will continue here. All teachers are using it’

‘It should be extended to all key stage one children – it would be lovely if it was part of the curriculum for that age group’

All staff involved directly with the programme reported improvements in many of the skills taught, in particular in ‘vocabulary’, ‘communication’, ‘compliment-giving’, ‘turn-taking’, ‘anger management and self control’ and ‘playing with other children’.

‘The children are able to express themselves better … to put themselves in someone else’s shoes’

‘They interact with each other better, for example using their ignoring muscle when other kids misbehave and continue with their work’

‘The children with the most severe problems have learned to control their tempers and you can talk them out of a strop and calm them down much quicker … It’s most effective when you get consistency between staff. Some kids haven’t had that before’

Staff also reported on the benefits to children of helping them to manage their feelings in a positive way. Four staff involved in the programme said that they had observed children using the principles in situations outside the classroom and that the skills were generalising to the playground.

Homework sheets were viewed as beneficial as they provided an opportunity to practise and generalise skills to the home environment. They were also seen to improve home-school links and encourage parental involvement.

‘They reinforce what they’ve learned and parents can play a part’

Helps remind the kids and reinforce what they’ve learned and also gives the parents a clue about rules’
The use of puppets was considered particularly effective, staff reported that the children were able to identify with them.

‘The puppets really hold their attention, they know its you talking but their eyes are on Molly and Wally!’

Staff reported positively on all aspects of the Dino curriculum, stating that all parts of the programme were beneficial.

‘Compliment giving teaches spontaneous social skills – makes kids focus on positive emotions’

‘The problem-solving one definitely, I think that one is the most important one’

‘Time-out’ is very effective and talking about a quiet place in his mind is helpful’

Staff reported that it was necessary to allocate preparation time between sessions and emphasised the importance of administrative support in order for the workload to be manageable.

‘It takes 45 mins to 1 hour reading time for each session – I had to make lots of notes in the beginning. It will be less in the future when I’m more familiar with it. I’ve had administrative support from school staff and the use of (university) office facilities. The school budget pays for paper materials’

‘It takes photocopying time, translation time into Welsh, colouring, e.g. of bingo cards. Ready-made packs, coloured in and laminated would be helpful – time saving. The time it takes depends on the activity selected for each week – from minutes to several hours each week’

Discussion

The purpose of this study was to evaluate a pilot delivery of the Webster-Stratton classroom programme in a primary school reception class. Overall feedback from school staff and parents about the programme was extremely positive. Parent reports of the children’s behaviour before and after the intervention showed that all of the programme children improved in their skills and behaviour on at least one of the three measures post-intervention and there was a significant reduction in the occurrence of problem behaviour as measured by the Strengths and Difficulties Questionnaire.

The staff delivering the programme were very enthusiastic about it and reported positive changes as did the school staff not directly involved in delivery of the programme. Nevertheless, given the work involved and demands on teachers generally, enthusiasm for the programme is unlikely to have been maintained if they had not seen many positive changes throughout the school which they attributed to the programme.

For most children this was a preventative programme rather than clinical intervention. However the two year one children were both displaying clinical levels of behavioural problems. One of these children improved the most, moving from the clinical to normal
range on both standardised scales with clinical cut-offs. The mother of this child also completed the parenting course. The three children whose parents had attended the parenting programme showed the greatest improvement.

The results of this pilot study suggest that this is a useful and effective universal programme that is welcomed by teachers and other school staf and parents. They also suggest that progress is enhanced through attendance of the parenting classes and that the programme could be used to identify children who are in need of a more intensive treatment programme such as the therapeutic small-group Dinosaur School.

There were limitations to this pilot study. As it was evaluating the delivery of this programme for the first time in one small reception class, the sample was small and there was no comparison group. It would also have benefited from a more objective measure such as the observation of child behaviour in the classroom. The ongoing expansion of this programme in Gwynedd, described below, will hopefully provide the opportunity for further study of this programme which will address these problems. There are already plans for independent researchers to observe and code child behaviour both in the classrooms and playgrounds of participating schools.

**The Dinosaur School Programme in Gwynedd schools**

The Incredible Years Dinosaur School Programme for the classroom was selected by Gwynedd CC because it appeared to have the best evidence base of available programmes to promote emotional literacy, anger management and problem solving skills among the growing numbers of young children arriving in school without these skills. It was also chosen because of the availability of training and support both from Seattle and from the University based Bangor Child Behaviour Project.

The Gwynedd Education Department recognised the need to:

i) establish a project steering group

ii) train teachers in the necessary skills to deliver the programme

iii) train other school staff in the key principles of labelled praise, proximal praise, praise for friendly behaviours and in stating commands in positive ways e.g. saying ‘use indoor walking feet’ rather than ‘stop running’

iv) equip teachers with resources to deliver the programme

v) provide ongoing supervision and support to teachers delivering the programme

vi) ensure that there was support from the top in the schools that are delivering the programme

Based on the preliminary results funding from the National Assembly for Wales was obtained to develop the programme for a further three years. This funding included the secondment of the head teacher who first introduced the programme and continued funding for support from the first author. Further teachers were trained to implement the programme in their reception classrooms during the 2002/3 school year and the
programme ran in nine reception classes in eight schools. From September 2003 all of these schools are running the programme for both reception and Year One classes and a further six schools have started the programme in their reception classes. The first school to run the programme continued the programme into Year One during 2002/3 and is implementing it in its Reception, Year One and Year Two classes for the first time in September 2003. The goal is to deliver Dinosaur School as a three-year programme for reception, year one and year two children in all primary schools in Gwynedd.

A further component was added to the strategy in 2002/3 with the introduction of the six-day Webster-Stratton teacher classroom management programme (Webster-Stratton, 1999; Webster-Stratton & Reid, in press). This was taught to two groups of teachers from North West Wales, including 18 from Gwynedd, by the first and fourth authors. In Gwynedd it was decided to target other teachers from the school that were implementing the Dinosaur School programme to further strengthen the consistent use of an agreed set of behaviour management principles throughout those schools. This is being separately evaluated but has been enthusiastically received by the teachers that attended it and has also been validated as an M.Ed. module in the Faculty of Education at the University of Wales, Bangor.

Because the programme was implemented systematically, with support built in, it was viewed positively both within the schools and by parents. The programme has been commended by school inspectors and visited by the Minister for Education and Lifelong Learning for the Welsh Assembly Government.

Conclusion

1. This pilot study of the effectiveness of this programme during its first year of operation provided evidence of improvements in child behaviours and demonstrated that, with the commitment of teachers and other school staff, it had the potential to change the culture within the school.

2. The programme has worked well because Gwynedd have done what is required to implement it in an evidence based way.

3. Having been successful in establishing this pilot project Gwynedd were than able to obtain additional funding to roll out the programme to more schools.

4. They have used this additional funding to provide further training, to translate materials into Welsh and to second the headmistress from the first school to support and supervise the staff in new schools joining the scheme.

5. The plan is evolving with the inclusion of the teacher classroom management programme.

The authors commend this evidence-based programme to promote children’s social and emotional competence which they have demonstrated translates well to a population of children in a bilingual community in North Wales. Further information about the programme is available through the Child Behaviour Project or from Gwynedd County Council.
References


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