Early results from developing and researching the Webster-Stratton Incredible Years Teacher Classroom Management Training Programme in North West Wales

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Abstract

The evidence-based Incredible Years Teacher Classroom Management (TCM) Programme was developed to meet demands from teachers for strategies to manage disruptive behaviours in the classroom (Webster-Stratton, 1999). This paper describes the programme and reports on its first use in the UK. In the first study 23 teachers attended the five-day classroom management programme, 20 completed the final satisfaction questionnaire and 21 participated in a semi-structured follow-up interview. Teachers who implemented the training in their classrooms reported satisfaction with the programme and believed that the strategies taught were effective and improved pupils' conduct. In the second study, blind observation of teacher classroom behaviour was undertaken in 21 classes, 10 teachers had received the TCM training and 11 had not. Teachers who received TCM training gave clearer instructions to children and allowed more time for compliance before repeating instructions. The children in their classes were more compliant than children in the classes of untrained teachers. The implications of these findings are discussed.

Key words

conduct disorder; Incredible Years Teacher Classroom Management Programme; classroom observation

Introduction

This article describes the introduction of the Incredible Years (IY) Teacher Classroom Management (TCM) programme in North West Wales, reporting on teacher responses to the programme and initial steps taken to evaluate it. The IY programme was developed and researched at the University of Washington, Seattle (Webster-Stratton & Reid, 2004) and randomised controlled trials by the programme developer in the US have demonstrated it to be effective in reducing conduct problems and promoting pupils' social, academic and emotional development in both clinical populations (Webster-Stratton, Reid & Hammond, 2004) and as a school-based preventive programme (Webster-Stratton, Reid & Hammond, 2001). To date, however, it has not been independently evaluated. This article provides a preliminary answer to two questions: i) is the programme acceptable to teachers working in a very different cultural and linguistic environment, and ii) is it effective?

The problem

Growing numbers of children start school with disruptive behaviour problems and deficits in the linguistic and social skills necessary to engage with an academic curriculum in the US and UK (Webster-Stratton, 1999; Scott *et al*, 2001). Between seven and 20 per cent of these children meet diagnostic criteria for conduct disorder (Webster-Stratton & Hammond, 1998). These children exhibit both social and academic difficulties (Ferguson & Lynskey, 1996), have problems in forming social relationships and are often rejected by their peers (Coie, 1990). Without help, the prognosis for these children is poor. Early-onset child conduct disorder is a powerful predictor of poor long-term outcomes, including mental health problems, delinquency, academic underachievement, unemployment and drug abuse (Kazdin, 1985). These children present challenges to teachers who often feel ill-equipped by their training to deal with them, especially where this relates to classroom management (Latham, 1997; Rigden, 1996). These difficulties with classroom management are also recognised by head teachers (Torff & Sessions, 2005). Although the above studies were mainly conducted in the US similar problems exist in the UK and the link between conduct problems and disruptive behaviour and difficulties in school, such as school attendance, school failure and inadequate peer relationships have been acknowledged in the UK in publications such as Every Child Matters (DfES, 2003), Cochrane reviews (Woolfenden, Williams & Peat, 2001) and NHS literature. However, this area in the UK has so far been under-researched, with only a few studies evaluating school-based interventions (see Hutchings *et al*, 2004; Hutchings *et al*, 2007).

The role of teachers

Early years teachers are in a key position to help children to develop the necessary prerequisite skills that enable them to benefit from their time in school. Furthermore, if children learn the social and relationship skills needed to fit in at school, the likelihood of them becoming persistent offenders in adolescence is greatly reduced, even if they continue to have poor relationships within their own families (Webster-Stratton, 1999). Teacher–child relationships have an important influence on the behaviour and achievement of children (eg. Birch & Ladd, 1998; Hughes, Cavell & Willson, 2001). Negative teacher–pupil relationships, which arise because teachers are dealing with increasing numbers of challenging children, are at the heart of many problems in the classroom. These negative teacher–pupil relationships consist of teacher behaviours such as high incidences of critical comments and/or punishment, and low incidences of praise and pupil behaviours such as disruptive classroom behaviour and non-compliance to appropriate teacher requests. More and more teacher time is spent dealing with aggression, misbehaviour, or non-compliance to teacher requests (Webster-Stratton, Reid & Hammond, 2001; 2004). Hamre and Pianta (2001) have demonstrated how the perceptions of pre-school teachers and their relationships with their pupils predicted a range of school outcomes eight years later. Negative teacher–pupil relationships in pre-school were related to academic and behavioural problems in 8th grade (age 13–14).

Classroom management training

It is important to ensure that early schooling provides children with opportunities to learn the essential social, self-management and problem-solving skills that will enable them to benefit from their education. Effective classroom management benefits both individuals and the classroom as a whole (Allen & Blackstone, 2003). One aspect of this is ensuring that teachers give sufficient attention to appropriate behaviour in the classroom. In a worldwide longitudinal study into teachers' classroom management skills, Latham (1997) found that over 90% of appropriate behaviours in the classroom went unrecognised by teachers. Teachers in the study were two to five times more likely to attend to misbehaviour than appropriate behaviour, thus often reinforcing inappropriate behaviour. This effect is particularly likely to occur for children with difficulties (Martens, Hiralall & Bradley, 1997), with anti-social children being much less likely to receive teacher encouragement for appropriate behaviour and more likely to be punished for misbehaviour than well-behaved children. When disruptive pupils are brought together in special classes disapproval statements can out-number approval statements by 15 to 1 (Latham, 1992). After classroom management training, however, the situation is reversed. Shores, Gunter and Jack (1993), for example, report four disapproval statements for every 167 positive approval statements after classroom management training. Unfortunately, although evidence-based classroom management programmes exist, surprisingly few education authorities adopt empirically supported interventions, such as the Incredible Years TCM programme (Kazdin *et al*, 1990).

The Incredible Years (IY) series

The IY series is a set of three inter-linked programmes for parents, teachers and children designed by

Webster-Stratton to promote children's social, emotional and academic competence (Webster-Stratton *et al*, 2001). The parent programme was developed and researched initially as a treatment intervention for children aged between three and eight years (Webster-Stratton & Hancock, 1998) and the child and teacher programmes developed subsequently for this same population (Webster-Stratton & Reid, 1999; Webster-Stratton, Reid & Hammond, 2001; 2004; Webster-Stratton & Reid, 2002; 2004). More recently, all three programmes have been implemented and evaluated as preventive intervention programmes in community settings (Webster-Stratton & Hammond, 1997; Webster-Stratton, 1998; Webster-Stratton, Reid & Hammond, 2001). The parent programme has been extensively evaluated over the last 20 years both by the developer and in dissemination trials in Wales, England, Canada and Norway. It has been shown to have a strong evidence base for efficacy in reducing conduct problems and aggression, and in increasing social competence (Taylor *et al*, 1998; Scott *et al*, 2001; Gardner, Burton & Klimes, 2006; Hutchings *et al*, 2007). Webster-Stratton's own research demonstrates that the addition of the child and teacher programmes improves child behaviour in school and increases positive teacher classroom management (Webster-Stratton, Reid & Hammond, 2004). However, these findings have not been independently replicated.

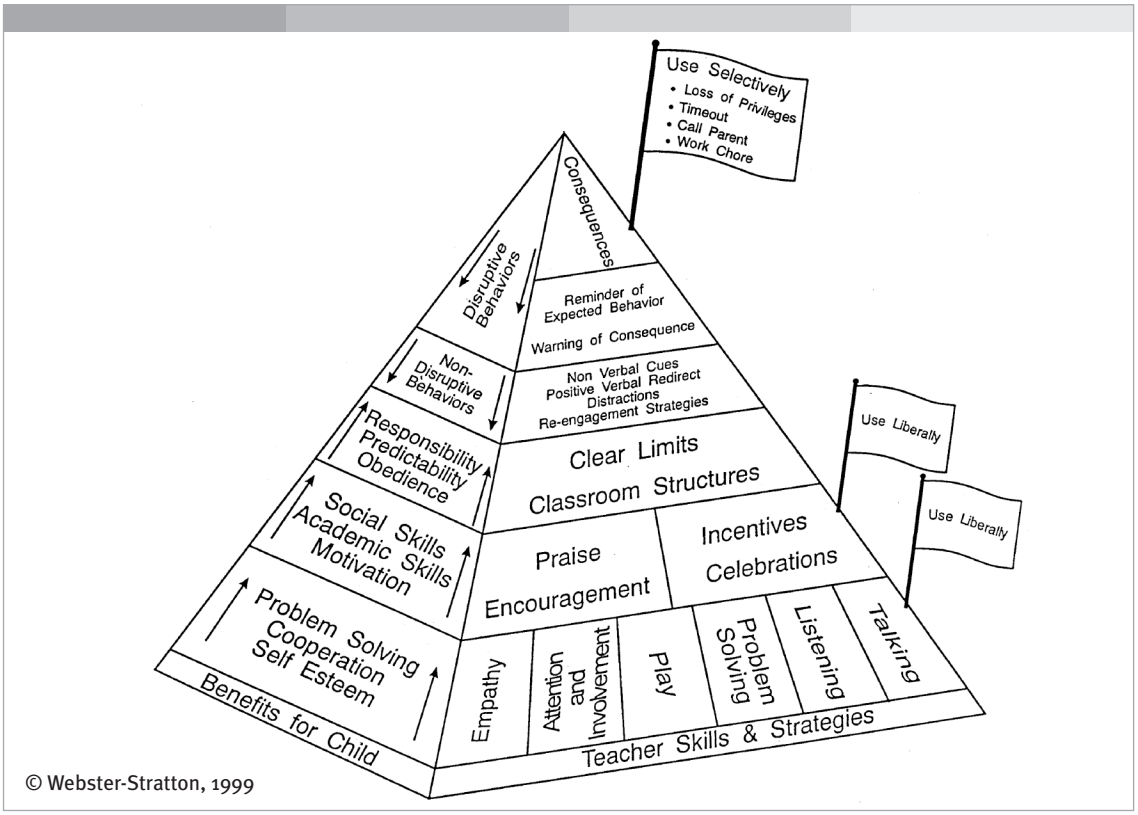
The IY Teacher Classroom Management (TCM) Programme

The IY Teacher Programme strengthens teacher–pupil relationships and develops children's social and problem-solving skills by increasing teacher competencies and improving home–school links (Webster-Stratton, 1999; Webster-Stratton, Reid & Hammond, 2001; Webster-Stratton *et al*, 2001). It has three core themes.

1. To promote ways that teachers can collaborate with parents in addressing their pupils' educational and emotional needs.
2. To present a variety of classroom management strategies to strengthen children's social and academic confidence.
3. To help teachers to set up individualised programmes to address the specific needs of high-risk children.

These skills are viewed as a 'toolkit' of strategies, which are represented diagrammatically by the teacher pyramid shown in ***Figure 1***.

Figure 1 The teacher pyramid (from Webster-Stratton, 1999: xi)



Teachers are first encouraged to build positive relationships with hard-to-engage children and parents and to prevent problems using proactive strategies that achieve increased compliance, such as classroom rules, timetables, specific instructions and clear transition signals for moving from one activity to another. Next, they practice strategies to increase desirable behaviours – through praise, encouragement and incentives – and to ignore inappropriate behaviours that are not disruptive to other children. Strategies to help parents to support their children's education are explored. The latter part of the programme focuses on managing non-compliance, including time-out and other consequences, and promoting children's emotional literacy and problem-solving skills.

The programme is collaborative and the methods, which are the same as those used in the parent and child programmes, include: (1) discussion about assignments and shared problem-solving of situations from teachers' own classrooms; (2) watching video-taped examples of classroom situations to promote discussion and help teachers identify effective management principles; and (3) role-play and practice of key strategies. Teachers are then set classroom assignments, such as building a connection with a challenging child, praising a difficult pupil, building a relationship with a parent, developing a behaviour plan for a particular child, setting up classroom rules and practising ways to remind children of them and developing a discipline hierarchy.

Evidence for the effectiveness of the IY TCM programme

Although the TCM programme has been evaluated rigorously by Webster-Stratton, unlike the parent programme, it has not been independently replicated. It was first evaluated in a randomised controlled trial[1] with 159 children diagnosed with conduct problems (Webster-Stratton, Reid & Hammond, 2004). The study compared child and parent training with and without teacher training. Post-intervention observations of teacher behaviour consistently favoured conditions in which teachers had received training. Trained teachers used more praise, were more nurturing and less inconsistent, and reported more confidence in teaching than control teachers. In classrooms with trained teachers, children were significantly less aggressive with peers and more co-operative with teachers.

Almost identical findings emerged in a randomised prevention trial with 272 disadvantaged children living in Head Start areas in which teachers and parents receiving the training programmes were compared with those receiving regular Head Start services (Webster-Stratton, Reid & Hammond, 2001). In classrooms where teachers received training, children were observed to have higher school readiness scores (engagement and on-task behaviour), increased pro-social behaviours and significantly reduced peer aggression. Teacher reports of parent involvement in school, as well as children's social competence, were also significantly higher for trained than for untrained teachers.

Delivering the teacher programme in North West Wales

The IY basic parent programme was introduced into North Wales by the first author in 1998 along with the IY Therapeutic Dinosaur School Programme (Hutchings *et al*, 2007b). Initially delivered as a clinic-based programme for children with conduct problems, the parent programme then spread to primary care and Sure Start services where it has been researched with parents of high-risk three- and four-year-olds across North and Mid Wales. Results show significant improvements in both parenting practices and child behaviour (Hutchings *et al*, 2007a; Hutchings, Bywater & Daley, 2007). As a result of these positive outcomes, the Welsh Assembly Government are now funding the training of parent group leaders across Wales as part of their Parenting Action Plan for Wales (DfTE, 2005a).

In 2001, Gwynedd County Council Education Department decided to pilot the introduction of the IY Classroom Dinosaur School and TCM programmes (Hutchings *et al*, 2004). This article reports on the response of the first two groups of teachers to receive the TCM training (Study one) and on a subsequent observational study of teacher and pupil behaviour undertaken in their classrooms (study two). The five-day TCM programme was delivered by the first and fifth authors. The fifth author is an experienced head teacher who has since been seconded full time to support the development of the TCM and IY Classroom Dinosaur School curriculum to the 106 primary schools across the county of Gwynedd in North Wales.

Study one: teachers' responses to TCM training

The intervention

The first two TCM courses in North Wales were run during 2002/3 and attended by 11 and 12 teachers respectively. Each course was run over one day per month for five months. The month-long intervals

allowed teachers time to complete the classroom assignments. Verbal and written feedback was provided on the classroom assignments. The courses were run according to the protocol and delivered bilingually in Welsh and English.

Participants

The 23 teachers were nominated by their employers (two Authorities in North West Wales). They came for a variety of reasons, including teacher interest and employer identified need. The mean sample age was 37 years with an age range of 24–56 years. Twenty-two teachers (96%) were female. Teaching experience ranged from two to 32 years, with a mean of 17 years. The sample consisted of 15 key stage one[2] teachers, two key stage two teachers, three teaching head teachers and three special needs teachers. Supply cover was provided and teachers made a big commitment to the course with mean overall attendance of 4.7 sessions (94% attendance). Fifteen participants (65%) attended all training sessions, six (23%) missed one session and two (9%) missed two sessions. By follow-up, two teachers had already attended the missed day by joining a subsequent course, and others who had missed a day were waiting to attend the day when the course was next run.

Measures

Two measures were collected: the Teacher Satisfaction Questionnaire (TSQ, a teacher report questionnaire – Webster-Stratton & Reid, 2002) and a subsequent semi-structured post-course interview. Twenty teachers (87%) were at the final session and completed the bilingual Welsh/English TSQ. Twenty-one teachers (91%) were interviewed using a post-course qualitative interview.

Teacher Satisfaction Questionnaire

The TSQ covers four areas: (i) usefulness of the programme, (ii) confidence in using the ideas, (iii) difficulty/ease of putting the programme into practice, and (iv) use of strategies for improving home–school links. A final question asks teachers to describe the two most useful things they had taken from the programme.

Responses on the TSQ are recorded on a scale of 1–5. A total satisfaction score is obtained by adding responses to all sections.

Results

The mean total satisfaction score was 4.2 (the mean score of all 1–5 ratings on the four scales), indicating a high level of overall satisfaction among teachers who attended the training (***Table 1***). The questions on the ease of putting the programme into practice received the highest mean rating (4.8), indicating that teachers found the programme very easy to implement in the classroom. This was closely followed by teacher ratings of their overall confidence in using the principles taught (4.6 or 'very easy') and the usefulness of the programme (4.5). Strategies for improving home–school links and working with parents received the lowest rating (3.5 'neutral' to 'satisfied'). Some of the suggested strategies to improve home–school links – such as home visits, having lunchtime meetings with parents, daily talks with parents or attending a sporting or other out-of-school activity in which the child was involved – were not seen as feasible by some teachers.

The post-course qualitative interview

Interviews were undertaken with 21 teachers by the third author. Five areas were explored: (i), background information, (ii) the course itself, (iii) application in the classroom, (iv) practical implications, and (v) comments and recommendations. All teachers had implemented the training in their classroom and qualitative analysis was conducted on the transcripts of interviews using thematic content analysis. These were coded into seven categories by two independent coders. To measure inter-rater reliability, Kappa's coefficient[3] was calculated and agreement was found to be high ($\kappa = 0.82$).

Table 1 TSQ mean responses

Scale title	Mean teacher score (n = 20), max possible score = 5
Usefulness of the programme	4.5
Confidence in delivering the programme	4.6
Ease of putting the programme into practice	4.8
Use of strategies to improve home school links	3.5
Total satisfaction score	**4.2**

Benefit from the course

When asked how they had benefited, teachers gave two responses on average. The most common themes were: (1) having developed an increased range of effective strategies, and (2) greater use of existing positive strategies. These themes were both cited by 11 teachers (52%). Nine teachers (43%) referred to a change in their philosophy and seven (33%) referred to changes in themselves in terms of feeling calmer and/or less stressed: '*I liked the fact that useful strategies were highlighted. The flexibility of the course – in terms of being able to select the strategies that would work better for me was great*'.

Most useful components

When asked what the most useful components of the course were, participants gave a mean of two responses. Sharing experiences and strategies with others was the most commonly reported benefit by 17 teachers (81%), suggesting that the collaborative philosophy of shared problem-solving had been effective and valued. This was followed by 13 teachers (62%) reporting having an extended range of strategies available to them and 10 teachers (48%) recognising the value of the philosophy with its emphasis on positive management strategies: '*It was good to share experiences with other teachers in similar situations – I no longer felt I was alone. I just wish I'd had this course as part of my teacher training!*'

Making use of the training in the classroom

All teachers had made use of the training in their classroom and gave an average of five responses as to how they did this. Becoming more effective with the use of praise was the most common response from all 21 teachers. This was followed by use of the 'give me five' prompt to sit quietly by 15 teachers (71%) and reward charts for specific behaviours by 14 teachers (67%). Thirteen teachers (62%) reported strategies to encourage children to quietly raise a hand to gain teachers' attention, and 12 teachers (57%) reported the use of a time-out chair to be useful: '*I do not raise my voice half as much as I used to, and give a lot more praise. Rather, I think before reacting, and it is good to focus on good behaviour in the classroom – something that I generally tended to ignore in the past. This has had such a positive effect on the children's behaviour to each other too.*'

Barriers to implementation

Fifteen teachers (71%) reported no barriers to implementation, two (10%) reported that it took time, but only initially, and two teachers (10%) reported that the inconsistency of other staff was a barrier.

How have pupils benefited?

All teachers said that pupils had benefited from their training and gave an average of three responses to this question. The most common response – from 14 teachers (67%) – was that the strategies had helped children to pay more attention, followed by becoming more considerate of others (11 teachers, 52%) and boosting children's confidence (10 teachers, 48%). Other responses included seeing children become more respectful (eight teachers, 38%), and children enjoying responsibility (six teachers, 29%). This latter response is further evidence of how the collaborative course style filters through to the classroom, with teachers finding ways to give greater responsibility to children: '*The whole ethos of the course was like a breath of fresh-air, that has changed my framework of thinking, and responding to, behaviour in the classroom. My pupils are much more considerate of their peers as a result! I wish all school staff received the training so we could establish continuity at lunchtime, and in the playground.*'

Managing disruptive behaviour

Irrespective of whether their class included children with behaviour difficulties, 20 teachers (95%) reported a general benefit to their class as a whole and, of the 12 who reported having children with specific behaviour difficulties, 11 (91%) reported that the training had helped them to become better equipped to deal with and teach these challenging children: '*I feel I can engage the children's attention better. They seem to have more respect for me and other pupils. They love being involved in making up rules, and finding strategies to solve problems. The best course I ever attended!*'

Participant recommendations

Nineteen teachers (91%) recommended the widespread implementation of the training programme across primary schools as beneficial for both teachers and pupils. Nine (43%) suggested incorporating the Incredible Years Classroom Management training into the BEd[4] system, feeling that this training was needed before beginning a career in the classroom. Nineteen (91%) would recommend the course to a colleague: '*It was refreshing to come back to the staffroom after the training, not having to say that the best thing about the course was the lunch! It definitely has been a worthwhile experience for me, and for my pupils, and I am eager for other members of my staff to receive this training.*'

There was a strong feeling among the teachers that other, non-teaching, staff in the school also needed training in behaviour management, with seven (33%) mentioning teaching assistants and others mentioning head teachers, playground and canteen staff. These responses demonstrate both how beneficial teachers found the course and emphasised the benefits of learning from other course participants, a central part of the collaborative philosophy on which the programme is based, and recognising and building on teacher expertise: '*I am completely transformed! My views on dealing with misbehaviour have changed radically – and for the better – as reflected in my pupils. I have been going on about the course to my staff – and it's just a shame that some teachers fail to realise the applicability of adopting a new perspective. I think the only way that they would benefit would be if they all had the opportunity of attending the course.*'

Practice result from this study

As a result of the positive feedback from these teachers, Gwynedd Education Service embarked on a programme of providing TCM training to teachers in all of its 106 primary schools as well as introducing the linked IY Classroom Dinosaur school curriculum for key stage one pupils as the second phase of the plan (Hutchings *et al*, 2004). The fifth author was seconded part-time to deliver the TCM training and Gwynedd agreed to collaborate with the University in funding a PhD student, the fourth author, to evaluate the programme. Study two reports on the preliminary results obtained while piloting observational measures of teacher and child behaviour in the classroom.

Study two: observational study comparing TCM trained and non-TCM trained teachers

Participants

Twenty-one teachers from three primary schools in Gwynedd, in each of which some teachers had received TCM training, agreed to be observed in their classrooms. Ten teachers were either fully trained or nearing completion of the TCM training while 11 had received no training. Initial contact and recruitment of schools was undertaken by the fifth author.

Measures

Observations were coded using frequency counts of teacher and pupil behaviours during a 30-minute classroom observation. A classroom observation scale (the Teacher–Pupil Observation Tool (T–POT); Martin, 2005) was developed by the fourth author, using items from the Dyadic Parent–Child Interaction Coding System (DPICS; Robinson & Eyberg, 1981; Webster-Stratton, 1989), a parent-child observational coding scheme, and the Multiple Option Observation System (MOOSES; Tapp, Wehby & Ellis, 2000), a classroom coding scheme. Both measures have been used by Webster-Stratton in a number of studies (eg. Webster-Stratton, 1998; Webster-Stratton & Hammond, 1997; Webster-Stratton, Reid & Hammond, 2001). However, neither was suitable for this study, the MOOSES being too complicated for observers to become reliable within the available time and the DPICS because it was designed for parent–child observation. The T-POT drew on codes from both the MOOSES and the DPICS, with item selection based on teacher and child behaviours that would be expected to change based on Webster-Stratton's previous findings. The measure covered 12 teacher behaviours, such as praise and commands, and 17 child behaviours, such as verbal aggression, positive interaction, compliance with instructions, destructive behaviour and off-task behaviour. Scoring was by means of frequency counts of each behaviour. The 29 items were reduced to six global teacher and four child categories. The three coders who took part in the study were all fully trained and reliable in use of the DPICS, having previously undertaken coding for a larger parent study (Hutchings *et al*, 2007a). The 10 T-POT global teacher and child categories (frequency counts) are:

Teacher categories	Child categories
Teacher positive	Child positive behaviour
Teacher negative	Child negative behaviour
Teacher praise	Child compliance
Teacher indirect command	Child non-compliance
Teacher direct command	
No opportunity given for compliance	

Procedure

Observations were undertaken in 21 classrooms in three local primary schools. Observers were blind as to which teachers had completed the five day TCM training and which had not. All three schools had both TCM and non-TCM teachers.

Teacher and pupil behaviour was coded continuously and simultaneously during 30-minute sessions. Each teacher was observed for one 30-minute session. The scores comprised frequency counts of each behaviour. Inter-rater reliability between the three coders was examined on all classroom observations using percentage agreement. Results demonstrated mean percentage agreement of 70% across the three trained coders.

Analysis strategy

Due to the variability in frequencies of behaviour scores across the 10 categories and the small sample size, non-parametric[5] analyses were performed. A Mann-Whitney U test[6] was performed to look for statistical differences between the TCM and non-TCM teachers and their children. In addition, effect sizes[7] were calculated using pooled effect size calculations.

Results

Trained teachers performed better then untrained teachers on nine of the 10 measures, and four categories (two teacher and two child) yielded statistically significant differences between the trained and non-trained groups. ***Table 2*** shows the results for each category.

Trained teachers made significantly greater use of direct commands. Direct commands are specific and tell the children exactly what is required of them, for example, 'Please put all the paint away in the cupboard'; this contrasts with an indirect command such as 'Tidy up'. Trained teachers also allowed significantly longer for children to respond to commands before issuing another command. There was significantly less non-compliant behaviour from the pupils of trained teachers and significantly more child positive behaviours (compliance, positive verbalisations and gestures) in the classes of trained teachers. In addition, teacher praise showed a trend in the expected direction, but narrowly failed to reach significance with TCM trained teachers. Pooled effect size calculations (shown on ***Table 2*** (d)) indicated that substantial differences existed between the two groups on most measures, but these differences may have failed to reach significance due to low power within the study.

Discussion

This article has described the IY TCM programme and evaluated its first use in the UK by: (1) reporting the responses from the first two groups of teachers from North West Wales to be trained, and (2) reporting subsequent observations of teacher and child behaviour in the classroom. The course was initially chosen due to an excellent evidence base from high-quality randomised controlled trials (Webster-Stratton & Reid, 1999; Webster-Stratton & Reid, 2004; Webster-Stratton, Reid & Hammond, 2004). It also complemented the local strategy of developing the IY Parent Programme in the area (Hutchings & Webster-Stratton, 2004).

The collaborative teaching methods, shared problem-solving, behavioural rehearsal and classroom assignments were all highly rated by

Table 2 Observed differences between TCM and non-TCM teachers

Composite variable	Mean TCM (SD)	Mean non-TCM (SD)	z value (M-W u)	p value	d
Teacher negatives	5.80 (3.08)	9.82 (7.29)	-1.10 (39.50)	.272 P > .05	0.77
Teacher positives	150.70 (43.75)	118.82 (48.63)	-1.55 (33.00)	.121 P > .05	0.69
Teacher praise	52.40 (27.62)	31.00 (22.18)	-1.83 (95.00)	.067 P > .05	0.86
Indirect commands	58.40 (26.15)	64.36 (32.35)	-0.28 (106.00)	.778 P > .05	0.20
Direct commands	10.80 (5.98)	5.91 (4.37)	-2.00 (27.00)	.048 P < .05	0.94
No opportunity	35.50 (20.43)	50.27 (16.98)	-1.97 (27.00)	.049 P < .05	0.79
Compliance	37.60 (17.15)	28.09 (12.97)	-1.31 (36.50)	.192 P > .05	0.63
Non-compliance	0.50 (0.85)	1.45 (0.82)	-2.38 (23.00)	.018 P < .02	1.13
Child positives	80.70 (32.20)	54.73 (19.93)	-2.54 (19.00)	.011 P < .02	0.99
Child negatives	7.10 (12.28)	5.64 (4.88)	-0.83 (43.50)	.408 P > .05	0.17

teachers, who had all made use of the strategies conveyed and gave extremely positive reports on the usefulness in the classroom of the methods taught. Classroom observational data corroborated the survey findings, demonstrating statistically significant differences between teachers and children in TCM classes compared with untrained classes. Together, these data demonstrate that, despite originating from Seattle, USA, the programme is both well received and effective in a largely rural bilingual area in North Wales. This is the first known independent replication of the effectiveness of this particular programme.

Undoubtedly this study has limitations, of which three are worthy of comment. First, the very small sample sizes for study two means that it is likely to be underpowered. However, by verifying the between group differences using effect sizes, it is probable that TCM leads to more change in teacher and pupil behaviour than has been demonstrated. Second, the fact that TCM and non-TCM trained teachers were working together in the same schools may have led to contamination, with untrained teachers possibly having picked up ideas and strategies from TCM trained colleagues. While it was not possible to control for this within our analysis, in reality such contamination would have made it more difficult to establish differences between the groups, therefore making this study a conservative estimation of the effectiveness of the TCM programme. Third, without baseline measures of teacher classroom behaviour, there is a possibility that the differences between TCM and non-TCM teachers resulted from sampling bias. However, the large effect size differences reported in this study are unlikely to have arisen by chance. A larger randomised control trial of TCM is currently underway in North Wales using only schools with untrained teachers at baseline. This will potentially provide additional evidence for the effectiveness of IY TCM programme.

Whilst it is a possibility that teachers who received the TCM were allocated to classes with more challenging children than non-trained teachers, most schools in the study were small, with either single or double entry forms (that is, only one or two classes existed for each age level), so re-allocation of staff would be difficult. In addition, there was no evidence from the qualitative interviews that allocation of classes to teachers was biased. Furthermore, whilst the trained teachers in this study had very recently received their training, there was an ongoing training schedule for the others to receive their training.

Implications of the study for educational training and practice

As demonstrated in this study, teachers generally report feeling ill-equipped by their training courses for the full range of challenges that they will meet in the classroom. This feeling of being unprepared for the demands of managing classroom behaviour applies more widely (Rigden, 1996). Acquiring the skills needed to manage increasing numbers of challenging and disregulated children at school should be a priority in training courses to enhance class harmony and the learning environment. Following the favourable response from the initial group of teachers, primary school teachers within Gwynedd County Council Education Authority are currently being trained in TCM (teachers in 46 of the 106 primary schools have so far received training). The programme has also been accredited as a module on the post-qualification MEd programme at the University of Wales, Bangor, enabling teachers from across the UK to access the programme. On the basis of this study, the Incredible Years TCM programme appears to be an appropriate tool to enhance post-qualification teacher training and could potentially contribute to the initial training curriculum. The Gwynedd Education Authority strategy appears to be a sensible and potentially cost-effective way of supporting teachers within the classroom. A further development has been the provision of regular accredited courses, through the Incredible Years Wales Centre, to train education specialists to deliver the programme which will further facilitate the spread of the programme.

There is growing recognition of the need for schools to promote children's social and emotional competence (Webster-Stratton, 1999), with the ever-increasing numbers of children starting school without the necessary pre-requisite skills to enable them to engage in an academic curriculum (DfTE, 2005b) in both the US and the UK. The UK Government is currently looking for effective programmes to combat these problems, which, if unresolved, produce significant long-term difficulties. The IY TCM programme makes a difference to children's ability to engage in positive relationships with their schools, itself a known protective factor against long-term behavioural problems.

Based on the enthusiastic initial response of their teachers to the programme and evidence of its effectiveness in Wales, education authorities in the UK may wish to follow the lead set by Gwynedd Education Service and take up this programme.

Summary of policy and practice implications

Teacher classroom management programmes can be effective in reducing problem behaviour in school pupils and increasing positive behaviour when:

- teachers are supported by their employers (authorities and schools) both in the provision of supply teachers for cover and in time to complete course assignments
- the courses are implemented with fidelity by a trained leader.

As a result of the positive feedback and results from these two studies:

- the fifth author has been seconded full-time for two years to deliver the TCM Programme
- funds have been obtained to further evaluate the programme
- Gwynedd Education Service has initiated a programme of providing TCM to teachers in all of its 106 primary schools and, in a second phase, the Incredible Years Classroom Dinosaur school curriculum for key stage one pupils will be rolled out.

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Endnotes

[1] Randomised controlled trials (RCTs) are used to evaluate the impact of services. They involve assigning individual respondents to 'treatment' and 'control' groups in such a way that each individual has an equal chance of being placed in each group, thereby reducing the possibility of bias. The groups are compared to determine the impact of the programme on key outcome measures.

[2] In the UK education is divided into key stages according to children's age. Thus, key stage one refers to the period 5–7 years. At the end of each key stage, each National Curriculum subject has a target for a particular level of skills, knowledge and understanding that a child should have.

[3] The Kappa coefficient is used to judge the inter-rater reliability between two or more individuals. Thus, when two people are making judgements on the same thing, for example a questionnaire, the Kappa coefficient measures the extent to which they agree with each other (ie. give the same responses).

[4] A Bachelor of Education (BEd) is an undergraduate academic degree that qualifies the graduate as a teacher in schools.

[5] Non-parametric statistical methods are mathematical procedures for statistical hypothesis testing which make no assumptions about the frequency distributions of the variables being assessed.

[6] The Mann-Whitney U test is used to assess whether two samples of observations (in this case TCM and non-TCM teachers and their children) come from the same distribution.

[7] An effect size is a standard or common measure of the strength of a treatment effect. Effect sizes around 0.2 are considered to indicate small change, 0.5 medium change and 0.8 or over large change.

