

An examination of the effects of a short course aimed at enabling teachers in infant, junior and secondary schools to alter the verbal feedback given to their pupils

Jeremy Swinson and Alex Harrop*

Liverpool John Moores University, UK

Nineteen teachers took part in a brief, one session, in-service course in which they were trained in behavioural techniques with the main aim of helping them increase their rates of approval contingent upon required behaviours from their pupils and to decrease their rates of disapproval. Subsidiary aims were that the teachers would be enabled to alter the balance of approval/disapproval given to academic and social behaviours, to increase the rate of approval given to group behaviours, to increase the rate of description given to behaviours approved/disapproved, to use pupils' names more frequently and increase redirections given to behaviours following disapproval. From observations taken before and after training, it was seen that the main aim was achieved, with teachers showing increased levels of approval contingent upon required behaviour and decreased levels of disapproval, these changes being accompanied by increased pupil on-task behaviour. For the subsidiary aims, the data showed an encouraging shift in the balance of the teachers' verbal behaviour towards social and academic behaviours but the results were rather mixed for the other subsidiary aims.

Keywords: *Short course; Teachers; Verbal feedback*

Behavioural interventions in school classrooms began to make an impact in the 1960s, one of the most influential of the early publications being that of Madsen *et al.* (1968) in the USA. Their investigation employed a clear statement of classroom rules, praise/attention given to appropriate behaviours and ignoring given to inappropriate behaviours. Classroom observations showed this package of treatment improved the classroom behaviour of the pupils. Research using similar methods followed in Britain, the first published British study of which the writers are aware

*Corresponding author: School of Psychology, Liverpool John Moores University, Henry Cotton Campus, Webster Street, Liverpool, L3 2ET, UK. Email: A.harrop@hrjm.ac.uk

being that of Ward (1971). Further details of early work may be found in articles by Harrop (1978) and Merrett (1981). Most of the published work detailing behavioural interventions describes work conducted with a small number of teachers to improve some aspect of their pupils' performance. The main focus of the work has been concerned with reducing disruptive behaviour in the classroom and increasing on-task behaviour, although there are a few exceptions, for example, Harrop McCann, 1983, 1984, who were concerned with 'reading attainment' and with 'creative writing,' while more recently, Panagopoulou-Stamatelatou and Merrett (2000) were concerned with 'independence and fluent writing.' The methodology normally includes the recording of the behaviour of pupils and teachers by observers situated in the classroom, although again, there are exceptions, for instance, Nicholls and Houghton (1995), who used video recordings of lessons.

One of the most important features of such behavioural investigations is that teachers are encouraged to increase positive feedback to their pupils contingent upon required behaviour and to decrease negative feedback. In the early days of behavioural interventions, there appears to have been a considerable imbalance between teachers' use of positive and negative feedback. A number of investigators, for example, White (1975) and Thomas *et al.* (1978), found that there was considerably more disapproval than approval being given to most pupils in schools. More recently, however, investigators have found a reversal of that situation, with more approval than disapproval being given (Wyatt & Hawkins, 1987; Merrett & Wheldall, 1987; Harrop & Swinson, 2000). The extent to which such a change is related to the numerous behavioural investigations which have attested to the importance of positive contingent feedback for appropriate behaviours is an open question.

When they analysed their data more closely, the latter three investigations found very much more approval was given to academic behaviours than to social behaviours, a feature White (1975) had also noted earlier. Taking the analysis a step further, Wyatt and Hawkins (1987) included in their investigation a measure of whether or not approval/disapproval was followed by descriptions of the behaviour approved/disapproved. That was because of the behavioural interpretation that improved learning results when pupils are given approval/disapproval together with descriptions of why they have obtained approval/disapproval (Cooper *et al.*, 1987, Rodgers & Iwata, 1991). Harrop and Swinson (2000) also recorded descriptions and found that description following disapproval occurred at a significantly higher rate than description following approval.

As well as articles concerned with accounts of interventions or surveys of current practice, there have been a few articles on the training of teachers in the use of behavioural interventions. In one of the earliest publications, Harrop (1974) described a course of six weekly or fortnightly meetings, each of two hours' duration, with a group of teachers. During the course, the teachers were each encouraged to undertake interventions with one of their pupils in order to increase appropriate behaviour and decrease inappropriate behaviour. Of the 16 teachers who attended the first meeting, eight completed studies. Seven of the studies were reported as successful, although success was evaluated merely in terms of the teachers' own observations.

Later, Wheldall *et al.* (1985) evaluated 'Batpack', described as a skill-based package for training teachers. Six primary school teachers were trained using 'Batpack' during six weekly one-hour sessions, with reading assignments between sessions. The results of their interventions with their classes showed that the percentage on-task behaviour of their pupils increased from a mean of 75.00 to 84.00, compared with a control group of five teachers whose mean on-task scores went from 74.80 to 68.80 over the same time period. The teachers' mean positive responses to their pupils increased by some 170% (30 to 80.33), and positive responses accompanied by 'reference to what was done' (description) increased from 9% of the responses (2.83 of 39) to 45% (32 of 89.33). Mean negative responses remained more or less unchanged, while for the control group, rather surprisingly, mean negative responses more than doubled during the same time period. Wheldall *et al.* (1989b) modified 'Batpack' for use in secondary schools, retaining the six-session delivery mode, giving the modification the appellation 'Batsac'. For 14 teachers, mean levels of on-task behaviour rose from 78.6% to 89.5%, teachers' mean positive responses doubled and mean negatives fell to around 25% of their pre-training level.

Another training programme which received considerable publicity when it was launched in the UK (see Makins, 1991; Cohen, 1993) was the American programme, 'Assertive discipline' (Canter & Canter, 1976, 1992). Like 'Batpack' and 'Batsac', it is based on behavioural principles. It requires six hours of training and includes many examples of good practice shown to teachers on video. The effectiveness of the programme has been demonstrated by a number of evaluative studies in the UK, most notably those of Nichols and Houghton (1995), Swinson and Melling (1995) and Woods *et al.* (1996). Each of these three studies reported that after training there was an increase in teachers' positive responses to pupils and a decrease in negative responses to pupils, together with increased pupil on-task behaviour.

The various interventions referred to above demonstrate the feasibility of training teachers to increase their rate of positive responses (approval) contingent upon appropriate pupil behaviour and to decrease their negative responses (disapproval), with concomitant improvements in pupils' behaviour. In each of the interventions described, however, there has been a considerable investment of time. The investigation described in this paper was the result of an attempt to produce similarly successful outcomes while decreasing the investment in training time.

Method

Sample

The head teachers of six schools in north-western England asked for staff training aimed at improving the classroom behaviour of their pupils. A proportion of the staff from each school volunteered to undertake training and agreed to be observed both before and after training. Six were teachers of infants and six were teachers of juniors, working in five different primary schools. Seven secondary teachers came from the same comprehensive school.

Procedure

It was explained to the teachers that the senior educational psychologist wanted to record their verbal behaviour and their pupils' behaviour both before and after training. Those who agreed to participate subsequently wore radio microphones while teaching one lesson to their classes both before and after training. Most of the lessons were classroom based, but at secondary level included a PE lesson held in a sports hall, a laboratory-based science lesson and a craft lesson based in a workshop.

Observer training and lesson scoring

1. *Pupil on-task behaviour.* Two educational psychologists and a behavioural consultant who had considerable teaching experience acted as observers, using momentary time-sampling at 10 second intervals. They had previously worked together as observers and had attained high levels of agreement when recording pupil on-task behaviour. Three reliability checks were made, and to ensure that high levels of observer agreement would not be mere reflections of high chance agreement (see Harrop *et al.*, 1989), a mean kappa was calculated for the reliability checks.

2. *Teacher approval/disapproval.* The senior educational psychologist trained the behavioural consultant to record from the tape recordings of the lessons using the definitions established in an earlier investigation (Harrop & Swinson, 2000), and presented here in Appendix 1. The teachers' verbal behaviour was recorded for approval contingent upon appropriate behaviour and for disapproval, whether the approval/disapproval was given for academic or social behaviour, whether it was given to individuals or groups, whether it was accompanied by a description or whether the pupils were named. In addition, instances of disapproval accompanied by redirection were recorded—i.e. telling the pupils what they should be doing. Training continued until percentage event agreement was above 80% on two successive occasions. From that point, the senior educational psychologist scored the remainder of the tapes but was aware that three lessons, taken at random, would be scored by the behavioural consultant and observer event agreement calculated. It is not possible to calculate kappa for data obtained in this way, nor is it necessary since the likelihood of chance agreement is minute because an agreement is only scored when both observers record the same behaviour occurring at the same (not predetermined) time.

Training the teachers

The training for the infant and junior school teachers took place in an evening, while for the secondary teachers it was part of an in-service day. It lasted approximately two and a half hours. There were two major elements in the training, feedback to the teachers based on a preliminary analysis of the pre-training lessons, and a Power-Point presentation 'Managing behaviour—four essential steps'

For the first element, mean scores only for each school were presented to the teachers, not individual scores. These scores were for percentages of: overall approval, approval for work (academic), approval for behaviour (social) and for overall disapproval, disapproval for work and disapproval for behaviour. The teachers were also told that overall most feedback (approval and disapproval) was given to individuals rather than groups and that only a minority of feedback contained a description. The proportion of approval/disapprovals with a description was noted, as was the use made of redirection. Comparisons with previous research were made and it was emphasized that, without exception, the results were very similar to those of other teachers in the UK and across the world. In particular, approval tended to be reserved for pupils' work, while disapproval tended to be directed at pupils' behaviour.

It was pointed out that the teaching styles evident from the lessons observed appeared to be reactive, and it was emphasized that disapproval for social behaviour was a very limited strategy that only yielded short-term changes in behaviour. It was argued that much more proactive strategies, involving more approval for appropriate behaviours, would result in improved pupil behaviour and learning.

When the teachers discussed their schools' results and the comments made about teaching styles, there was general agreement that the views expressed about being more proactive seemed logical. There were no major objections raised.

The second element of the training, namely the Power-Point presentation, included 23 overhead projections. Most of the projections included a graphic aimed at representing the point being made and included very brief written material. The teachers were provided with a copy of the presentation and were encouraged to make notes. There were four essential aspects to the presentation. These may be summarized, in instructional form, as in the following.

Four essential steps to managing classroom behaviour

1. *Always make your requirements absolutely clear.* Requirements for each class situation must be simple and observable. Directions should be explicit and include: materials needed by pupils, permitted noise levels, pupil seating positions, means of communication.
2. *Remember to look for the behaviour you want rather than the behaviour you do not want.* Whenever a direction or instruction is given, look for pupil(s) complying and either praise or inform them that they are doing what is required. Naming the pupil(s) concerned adds value to the acknowledgement, and adding description of the acknowledged behaviour repeats the original instruction for the rest of the class.
3. *Frequently acknowledge pupils when they are doing what is required.* Praise or acknowledge pupils as they work appropriately. Do not be too effusive, concentrate on the behaviours concerned and make appropriate use of private feedback, particularly with older pupils. Giving approval to a group is a good way of delivering approval to a number of pupils and is especially useful for maintaining appropriate group behaviour.

4. *Change the frequency of the feedback to suit the situation.* Use more feedback at the beginning of any new activity or when a new set of instructions is given.

Finally, teachers were given advice on how to deal with off-task and disruptive behaviour. This advice may be summarized as: do not draw attention to pupils who are off-task, praise/acknowledge on-task pupils next to or near such pupils. For off-task pupils, additional strategies are 'the use of the look', 'calmly repeating the directions with name'. If these do not work, get close, use eye contact, state expectations clearly and quietly, remind the pupil of consequences. Never ignore disruptive behaviour. Use school sanctions if a pupil wilfully hurts another, deliberately damages property, overtly refuses to do what they are told, engages in behaviour that stops the lesson functioning. Remember that 'telling pupils off', can be a complete waste of time unless the pupil is told what behaviour is expected; therefore, it is essential to use redirections as part of the feedback to pupils.

The main aim of the course was that the teachers would increase their rates of approval contingent upon required behaviours and decrease their rates of disapproval and that these changes would be accompanied by increased pupil on-task behaviour. Subsidiary aims were that the teachers would change the balance of approval to social behaviours and academic behaviours, increase the rate of approval given to groups of pupils, increase the rates of description of behaviours, use pupils' names more frequently and increase their rates of redirection to pupils following disapproval.

Results

Table 1 shows that overall the teachers increased their rates of approval following training from 1.09 per minute to 1.91 per minute ($t = 5.62, p < 0.0001$). At the same time, they decreased their overall rates of disapproval from 1.00 to 0.39 per minute ($t = 3.79, p < 0.001$) Concomitant with these changes, the overall on-task behaviours of the pupils increased from 77.5% to 94.1% ($t = 7.47, p < 0.0001$). Moreover, the changes in overall rates of approval, disapproval and on-task behaviours are reflected in all three levels of schooling. Only one of the 19 teachers failed to increase her pupils' on-task behaviour and her pre-training level was 96.9%, which after training became 96.6%. The mean kappa value of 0.75 for observer agreement is convincing evidence of substantial observer agreement on the pupils' behaviour over and above that of chance, while the event agreement value of 83% is good evidence that the scoring of the tapes continued at the level attained at the end of training.

When the teachers' approval is examined in more detail, as displayed in Table 2, it is seen that both mean rates of approval to academic behaviours ($t = 4.59, p < 0.001$) and mean rates of approval to social behaviours ($t = 3.89, p < 0.001$) have increased considerably, as have mean rates of approval to individuals and to groups, although the latter two, unlike the former two, are not statistically significant changes. There is also some evidence that the teachers had adjusted the 'balance' of their approval towards giving a larger proportion of their approval to social behaviour than previously, in that overall the rate of approval for social behaviour increased by 200% (0.13

Table 1. Mean approval and disapproval rates per minute and pupil on-task percentages before and after training

Teachers	Timing	Approval rate	Disapproval rate	Pupil on-task percentage	<i>N</i>
All teachers	Pre	1.09	1.00	77.5	19
	Post	1.91**	0.39**	94.1**	
Infant	Pre	0.97	0.62	78.7	6
	Post	1.99*	0.21	93.8*	
Junior	Pre	1.47	0.83	77.7	6
	Post	2.41*	0.21*	95.9*	
Secondary	Pre	0.87	1.48	76.2	7
	Post	1.41*	0.70	92.7*	

Note: For pupil on-task behaviour the mean percentage observer agreement for the three reliability checks = 93%, mean kappa = 0.75.

For teacher verbal behaviour the mean percentage agreement for the three lessons scored at random = 83%.

* $p < 0.05$, ** $p < 0.01$.

to 0.39), whereas that for academic behaviour increased by 64% (0.95 to 1.56). No such adjustment of 'balance' is seen for rate of approval/disapproval to groups rather than to individuals.

Conversely, mean rates of teachers' disapproval have fallen to academic ($t = 2.28$, $p < 0.05$) and social behaviours ($t = 3.02$, $p < 0.01$) and to individuals and groups, as Table 3 shows. It can also be seen that the percentage rate of disapproval for social behaviour has fallen to 35% of its pre-training value (0.77 to 0.27), while the percentage for academic behaviour has fallen to 72%. While rate of disapproval for group behaviour has fallen to 68% of its pre-training value, rate of disapproval for individual behaviour has fallen to 40% of its value.

Table 2. Mean approval per minute given to academic and social behaviours and to individuals and groups

Teachers	Timing	Academic	Social	Individual	Group	<i>N</i>
All teachers	Pre	0.95	0.13	0.97	0.14	19
	Post	1.56**	0.39**	1.55	0.27	
Infant	Pre	0.82	0.11	0.85	0.01	6
	Post	1.60**	0.39	1.73	0.27	
Junior	Pre	1.34	0.16	1.32	0.14	6
	Post	2.05	0.52	1.90	0.35	
Secondary	Pre	0.74	0.12	0.74	0.26	7
	Post	1.10	0.28	1.02	0.18	

** $p < 0.01$.

Table 3. Mean disapproval per minute given to academic and social behaviours and to individuals and groups

Teachers	Timing	Academic	Social	Individual	Group	<i>N</i>
All teachers	Pre	0.25	0.77	0.86	0.16	19
	Post	0.18*	0.27*	0.34	0.11	
Infant	Pre	0.24	0.38	0.61	0.06	6
	Post	0.10	0.11	0.17	0.04	
Junior	Pre	0.22	0.61	0.66	0.17	6
	Post	0.08	0.13**	0.16	0.05	
Secondary	Pre	0.29	1.23	1.60	0.53	7
	Post	0.16	0.54	0.49	0.21	

* $p < 0.05$, ** $p < 0.01$.

In the pre-training condition, overall the teachers gave a slightly larger proportion of description of pupil behaviour following disapproval than following approval, as Table 4 shows. After training, there was a very small overall increase in the proportion of description given and the disparity between the proportion given to disapproval and approval showed a small increase. These data can give the impression that overall after training there was more description following disapproval than description following approval. However, that is not the case. As previously discussed, there was a large increase in overall mean approval rates and a large decrease in overall disapproval rates (Table 1), approval after training being given nearly five times as frequently as disapproval (1.91/0.39). It follows therefore, that in absolute terms, while before training there were roughly equal amounts of description given following approval and disapproval, after training there was much more description following approval than following disapproval.

Teachers were encouraged during training to use the pupils' names to describe the behaviour being approved/disapproved, and when disapproving to redirect pupils to acceptable behaviours. As Table 5 shows, overall there was a marginal increase in the

Table 4. Mean proportion of verbal feedback that contained a description both before and after training

Teachers	Timing	Approvals	Disapprovals	<i>N</i>
All teachers	Pre	0.32	0.36	19
	Post	0.36	0.49	
Infant	Pre	0.41	0.53	6
	Post	0.50	0.70	
Junior	Pre	0.18	0.09	6
	Post	0.26	0.53	
Secondary	Pre	0.37	0.23	7
	Post	0.49	0.36	

Table 5. Mean proportion of teachers' use of pupils' names following approval and disapproval and the proportions of redirections following disapproval, both before and after training

Teachers	Timing	Naming following approval	Naming following disapproval	Redirection	<i>N</i>
All teachers	Pre	0.15	0.31	0.34	19
	Post	0.16	0.24	0.52	
Infant	Pre	0.19	0.34	0.37	6
	Post	0.15	0.22	0.41	
Junior	Pre	0.10	0.34	0.31	6
	Post	0.21	0.24	0.77	
Secondary	Pre	0.16	0.26	0.35	7
	Post	0.12	0.29	0.40	

proportionate use of pupils' names with approval and a small decrease with disapproval, that is before training 0.15 of approvals and 0.31 of disapprovals were accompanied by naming the pupil, following training these proportions were 0.16 and 0.24 respectively. For redirection there was a proportionate increase of more than 50%. As was the case for description, however, because of the large increase in overall mean approval (1.09 to 1.91) and the large decrease in overall mean disapproval (1.00 to 0.39), in absolute terms after training there was a large increase in the naming of pupils following approval and a large decrease in the naming of pupils following disapproval. For redirection, while there was a proportionate increase of more than 50% because of the large overall decrease in overall mean disapproval, in absolute terms there was less redirection given after training than before training.

Discussion

The main aims of the training programme were to help teachers improve their rates of approval contingent upon appropriate pupil behaviour to reduce their rates of disapproval and to increase their pupils' on-task behaviour. The results show that the programme has successfully fulfilled those aims. They show teachers' approval/disapproval rates being changed by a relatively brief intervention and these changes being accompanied by increased levels of pupil on-task behaviours.

Because the investigation comprised one pre-training measure and one post-training measure, we cannot claim any long-term effect of the intervention. We do, however, feel confident that the increased level of pupil on-task behaviour that was experienced by all but one teacher in the sample has emphasized to the teachers the value of maintaining their approval/disapproval levels at their post-training rates. It would have been valuable to have conducted a follow-up investigation to see whether the changed levels had been maintained. Such a refinement to the study was not possible, however, because of the time constraints contingent upon observing the 19 teachers prior to training, conducting the training and then making a further observation of each of the

teachers. Any follow-up would have had to have taken place in another school year and that would have introduced too many confounding variables, not least of which would have been the fact that the teachers would be teaching different classes.

When we look at how approval and disapproval was applied to academic and social behaviours, our data show approval being predominantly applied to academic behaviours and disapproval to social behaviours before training, a feature that we reported previously (Harrop & Swinson, 2000) from a different sample of teachers. The intervention has changed that balance, producing a bigger proportionate increase in approval given to social behaviours than to academic behaviours and a much larger proportionate decrease in disapproval given to social than to academic behaviours.

The effect of these changes was a shift in the pattern of teacher feedback. After training, the most common form of feedback was still approval to academic behaviours, but the next most common became approval to social behaviours. Disapproval to social behaviours and to academic behaviours became the least common types of feedback.

As a consequence, we can say that two clear changes appear to have taken place as a result of the training. First, there has been an overall increase in approval to both academic and social behaviours, which has been accompanied by an overall decrease in disapproval to each of these behaviours. Second, there has been a shift in the way the teachers responded to pupils' social behaviours. Before training, they were using nearly six times as much disapproval as approval to social behaviours (0.77/0.13), while after training, this relationship was reversed and more approval than disapproval was given to social behaviours (Tables 2 and 3).

When we consider the effects of the intervention on other features, the results do not reach the same levels of statistical significance as those previously discussed. Although training has produced increased levels of approval and decreased levels of disapproval to both individuals and groups, there is little change in the balance between the two. It is still evident that approval and disapproval are primarily aimed at individuals rather than groups. It may be, of course, that there is far more individual work than group work taking place, so that the results are a mere reflection of that arrangement. A further investigation would be necessary to ascertain if that is the case.

There is some evidence that after training the teachers increased the proportion of description following both approval and disapproval. It is interesting to see that the proportionate use of description following disapproval has increased rather more than following approval. That, we think, is a reflection of the fact that behaviours of which teachers disapprove are usually more self-evident, and as such easier to describe, than behaviours of which they approve. Behaviours of which teachers disapprove tend to be those behaviours which break classroom rules and/or impede the smooth functioning of a lesson, while behaviours approved tend to be those behaviours which pupils are directed to perform. It is, for example, easier and more natural to say to one pupil 'Just stop that walking around when you should be reading', than it is to say to another: 'It is good to see you reading.'

There was a small increase in the proportion of approvals that included naming but a decrease for disapprovals. That was a somewhat surprising result since the teachers

had been encouraged to use the pupils' names with both approval and disapproval. The increased proportion of naming following approval was marginal, so that we cannot claim the intervention was successful on that count. Why the proportion of naming following disapproval has decreased is difficult to explain, although our suspicion is that somehow the emphasis on increasing approval rates and decreasing disapproval rates has obscured the naming message. Our reasoning may be regarded as tortuous, but essentially one of the messages the teachers were getting was to increase naming while decreasing disapproval. With all the complexities that are occurring during the teaching of a lesson, it is very understandable that such a message might be misconstrued. Whatever the explanation, it seems evident that the intervention did not successfully help teachers to increase the proportion of times that pupils were named when their behaviours were being either approved or disapproved.

It should be emphasized here that while the use of proportions seems to be the most appropriate way of processing these data when considering the effectiveness of training, in practice the frequencies were much different. Although the proportion of naming with approval increased marginally, the mean frequency of naming nearly doubled, due to the increase in the rate of approval, while the mean frequency of naming with disapproval fell to just less than a third of its pre-training levels, because of the reduction in rates of disapproval. As a consequence, after training, the pupils' names were used much more in association with approval than with disapproval, whereas the reverse was true before training. The same kind of reasoning can, of course, be applied to the use of description. Because of the large increase in the overall mean rate of approval and the large decrease in the overall mean rate of disapproval, the teachers after training were using, in absolute terms, far more description following approval than description following disapproval, despite description following disapproval increasing proportionately more than description following approval.

That mean proportions of redirection following disapproval increased from pre-training to post-training is taken as an encouraging sign, even though because of the large overall mean decrease in disapproval, absolute levels of redirection also decreased.

At this point it has to be admitted that while the course achieved its primary objectives in terms of increasing contingent positive responses, decreasing negative responses with consequent improvements in pupils' on-task behaviour, it made less impact on other features. There were, however, encouraging signs, particularly the fact that the teachers' use of feedback for social behaviours switched very considerably from being predominantly disapproving to being predominantly approving.

More generally, the changes in teacher behaviour and the consequent changes in pupil behaviour bear comparison with those achieved by others in the field (Harrop, 1974; Wheldall *et al.*, 1985; Nichols & Houghton, 1995; Swinson & Melling, 1995; Woods *et al.*, 1996). While these training packages varied somewhat in content and style of presentation, they all involved at least six hours of training presented either as a number of sessions or as a whole day. In contrast, the training in this intervention took two and a half hours to deliver. It is therefore worth considering the elements of training used in the intervention that made it so powerful.

First, the advice given to the teachers was based upon proven results. That allowed the presenters to state that ‘we recommend you treat pupils in this way because we have sound evidence that if you do, it will work’, rather than presenting a series of bland suggestions the teachers might like to try. Time was allowed for discussion on implementing strategies but there was little opportunity for debate about whether the methods recommended would work.

Second, at the beginning of the training session the teachers were given general, not individual, details of pre-training performance. The results were used to highlight features that the presenters wanted the teachers to change. The teachers were given an opportunity to reflect upon current performance and to discuss alternative strategies. These alternative strategies became the main content of the training.

Third, every effort was made to keep the content simple. This was exemplified by the initial analysis of the pre-training lessons and by the ‘four essential aspects’ of the Power-Point presentation.

It is evident that the simple advice the teachers were initially given when they were presented with mean scores for their schools—i.e. overall approval and disapproval rates, together with the balance of each directed at academic and social behaviours—has had more influence on their subsequent teaching behaviours than the other aspects. While these other aspects (use of pupils’ names, descriptions and redirections) are no more complex in themselves, they do add complexity when added to the simple advice regarding approval and disapproval. In retrospect, it seems likely that the teachers may have been overloaded with advice.

Although it has not been possible to disentangle the effects of specific elements of the training package in relation to the changes in pupil behaviour, the results yield considerable information on the changes that occurred in the teachers’ behaviour as a consequence of the training package. It is worth mentioning that those aspects of the teachers’ behaviour which did not change have obviously not contributed to the increased pupil on-task behaviour. As for which elements were responsible, on the basis of previous research, it seems reasonably safe to talk in terms of increases in contingent approval and decreases in disapproval. Whether other specific aspects that changed have themselves contributed to increased pupil on-task behaviour is open to question.

The methodology has been rigorous and, with the exception of the research of Nichols and Houghton (1995), it has been more rigorous than the reports of other training courses that have relied, at best, on the recording of transient behaviour and have not checked whether their observer agreement levels are above chance. The permanent recording has allowed observers to record independently, to discuss their recordings, replay sources of disagreement occurring at particular instances, modify definitions, etc. Moreover, the use of tape recordings allowed for agreement checks on teacher verbal behaviour to be made at random, without both observers being aware that an agreement check was being made. That is an important and unique feature of the investigation, which considerably strengthens the confidence that can be placed upon the data extracted.

It might be argued that using radio microphones has introduced too much artificiality into the classroom. We do not believe that to be the case since an earlier investigation,

using the same methodology (Harrop & Swinson, 2000), produced results on teachers' rates of approval and disapproval very much in line with those of previous investigations that used classroom observers (Merrett & Wheldall, 1987; Wyatt & Hawkins, 1987; Wheldall *et al.*, 1989a).

In conclusion, the data demonstrate that the short course of training has achieved its primary objectives of increasing teachers' rates of approval contingent upon appropriate pupil behaviour and of decreasing disapproval, with concomitant improvements in pupils' behaviour. A more refined analysis in terms of academic and social behaviours, applications to individuals and groups, and the use of description and redirection yielded some encouraging signs but less clear-cut results. These latter concerns are, however, relatively minor in comparison with what has been achieved in such a short training period.

References

- Canter, L. & Canter, M. (1976) *Assertive discipline* (Santa Monica, CA, Lee Canter Associates).
- Canter, L. & Canter, M. (1992) *Assertive discipline: positive behavior management for today's classrooms* (Santa Monica, CA, Lee Canter Associates).
- Cohen, J. (1993) *The world tonight*. BBC Radio 4, 11 June.
- Cooper, J. O., Heron, T. L. & Heward, W. L. (1987) *Applied behavior analysis* (Columbus, OH, Merrill).
- Harrop, A. (1974) A behavioural workshop for the management of classroom problems, *British Journal of In-Service Education*, 1(1), 47–50.
- Harrop, A. (1978) Behaviour modification in the ordinary school setting, *AEP Journal*, 4(7), 3–15.
- Harrop, A., Foulkes, C. & Daniels, M. (1989) Observer agreement calculations: the role of primary data in reducing obfuscation, *British Journal of Psychology*, 80, 181–189.
- Harrop, A. & McCann, C. (1983) Behaviour modification and reading attainment in the comprehensive school, *Educational Research*, 25(3), 191–195.
- Harrop, A. & McCann, C. (1984) Modifying 'creative writing' in the classroom, *British Journal of Educational Psychology*, 54, 62–72.
- Harrop, A. & Swinson, J. (2000) Natural rates of approval and disapproval in British infant, junior and secondary classrooms, *British Journal of Educational Psychology*, 70(4), 473–483.
- Madsen, C. H., Becker, W. C. & Thomas, D. R. (1968) Rules, praise and ignoring: elements of elementary classroom control, *Journal of Applied Behavior Analysis*, 1, 139–150.
- Makins, V. (1991) Five steps to peace in the classroom, *Times Educational Supplement*, 1 November, p. 17.
- Merrett, F. (1981) Studies in behavior modification in British educational settings, *Educational Psychology*, 1, 13–38.
- Merrett, F. & Wheldall, F. (1987) Natural rates of teacher approval and disapproval in British primary and middle school classrooms, *British Journal of Educational Psychology*, 57, 95–103.
- Nicholls, D. & Houghton, S. (1995) The effect of Canter's assertive discipline program on teacher and student behaviour, *British Journal of Educational Psychology*, 65, 197–210.
- Panagopoulou-Stamatelatos, A. & Merrett, F. (2000) Promoting independence and fluent writing through behavioural self-management, *British Journal of Educational Psychology*, 79(4), 603–622.
- Rodgers, T. A. & Iwata, B. A. (1991) An analysis of error-correction procedures during discrimination training, *Journal of Applied Behavior Analysis*, 24, 775–782.
- Swinson, J. & Melling, R. (1995) Assertive discipline—four wheels on this wagon—a reply to Robinson and Maines, *Educational Psychology in Practice*, 11(3), 1–8.

- Thomas, J. D., Presland, I. E., Grant, M. D. & Glynn, T. L. (1978) Natural rates of teacher approval and disapproval in grade 7 classrooms, *Journal of Applied Behavior Analysis*, 11, 91–94.
- Ward, J. (1971) Modification of deviant classroom behaviour, *British Journal of Educational Psychology*, 41, 304–313.
- Wheldall, K., Houghton, S. & Merrett, K. (1989a) Natural rates of teacher approval and disapproval in British secondary school classrooms, *British Journal of Educational Psychology*, 59, 38–48.
- Wheldall, K., Houghton, S., Merrett, F. & Baddeley, A. (1989b) The behavioural approach to teaching secondary aged children (Batsac): two behavioural evaluations of a training package for secondary school teachers in classroom behaviour management, *Educational Psychology*, 9(3), 185–196.
- Wheldall, K., Merrett, F. & Borg, M. (1985) The behavioural approach to teaching package (Batpack): an experimental evaluation, *British Journal of Educational Psychology*, 55, 65–75.
- White, M. A. (1975) Natural rates of teacher approval and disapproval in the classroom, *Journal of Applied Behavior Analysis*, 8, 367–372.
- Woods, S., Hodges, C. & Aljunied, M. (1996) The effectiveness of assertive discipline training: look before you leap off this wagon, *Behaviour Research and Therapy*, 6, 51–64.
- Wyatt, W. J. & Hawkins, R. P. (1987) Rates of teachers' verbal approval and disapproval, *Behavior Modification*, 11(1), 27–51.

Appendices

Appendix 1: Teacher responses

Approval: Any teacher response that indicated praise or satisfaction with the behaviour of one or more pupils, including such positive comments as 'Excellent', 'Well done', 'Good girl/boy', 'Yes'. It also included the rather less positive statement, 'That's right/correct', and the teacher's repetition of a pupil's answer in a positive, neutral but non-querulous tone.

Disapproval: Any teacher response to one or more pupils that was a rebuke or which indicated disapproval. Common examples included: 'Stop that', 'Be quiet', 'No, Pat', 'Now is not the time to be doing that'. This category included 'the teacher repeating a pupil's response in a querulous or questioning manner', together with statements implying negative consequences, e.g. 'I won't tell you again', and saying 'No' in response to an incorrect pupil response. It also included directions given with intonations implying teachers' intentions to reduce behaviours, e.g. 'Now I want you to listen quietly'.

Individual: Any teacher response given to a single pupil following the pupil's behaviour.

Group: Any teacher response to more than one pupil following their behaviour, e.g. 'That's good, Chris and Alex', 'You lot ought to sit still', 'That's what I like to see, a nice quiet class'.

Academic behaviour: These were the normal curriculum behaviours, reading, writing, listening, answering questions, i.e. performing prescribed activities.

Social behaviour: Behaviours indicative of classroom manners, following classroom rules and routines, e.g. settling down to work quietly, remaining seated when appropriate, putting hands up in answer to a general question to the class, lining up in an orderly manner when requested. They also included the converse behaviours of not settling down to work quietly, not remaining seated when appropriate, etc.

Description: Teacher response that described the pupil behaviour for which approval or disapproval was given. For social behaviours this category is relatively obvious, so that in the previous example, 'That's what I like to see, a nice quiet class', the behaviour of the class is described as well as being given approval. For academic behaviour an approving or disapproving comment followed by description is also relatively obvious, e.g. 'Yes, that was a quick calculation' (approval plus description), and 'No, you haven't thought about that properly' (disapproval plus description). For academic behaviours in which the teacher repeats the pupil's response it was decided that a correct pupil response that was repeated and then commented upon would be categorized as approval with description, e.g. 'Sixty-eight, yes that's right, Val'. In like manner, an incorrect pupil response which was repeated and commented upon was categorized as disapproval with description.

Redirection: Teacher's response following disapproval that describes an approved behaviour, e.g. 'Don't do that, Viv, I want you to work in silence'. For pupil answers to teachers' questions, redirection could take the form of rephrasing the question, e.g. 'No, Sam, it isn't a simple addition, look more carefully at the wording of the question'.