Pupils and Policy: what is the target?

Clare Tikly, Richard Noss & Harvey Goldstein
The three authors are members of the Mathematical Sciences Group of the Institute of Education, University of London.

Introduction

The current rationale for a national curriculum is made explicit in *Developing the School Curriculum*, the Qualification and Curriculum Authority (QCA) report and recommendations published in August 1999 following consultation. This article considers target setting, one of the statutory requirements, with reference to the National Curriculum aims of promotion of standards and providing coherence and continuity to pupils.

Following some years of publication of school and LEA performance tables, based on SATs and GCSE results, the Government has begun to set national and local achievement targets. LEAs, in turn, consult with head teachers and school governors about the targets they should set for schools.[1] The performance tables and targets are in terms of the percentages of pupils reaching predefined National Curriculum levels in English, mathematics and science. There are other targets, such as those based on truancy rates, but it is the target-setting process for academic achievement that is the most prominent.

Anticipating the considerable impact that target setting could have on schools' internal procedures we carried out interviews in a sample of three London schools during the Spring term of 1999, in order to discern the nature of the initial changes, focussing on mathematics.[2] Governors and LEA advisers or inspectors are expected to become involved in setting targets at whole-school level and, as our pilot study indicates, senior managers and governors are beginning to play a part in setting subject specific targets. In some mathematics departments these are simply redefined as targets for seated classes but there is evidence of new and imaginative methods for using targets in a formative way with individual pupils.

A key issue is how the aims of 'establishing standards' and 'promoting public understanding' (QCA, 1999) may conflict with the aim of establishing educational entitlements for individual children. Institutional and individual needs are not necessarily concurrent: the key issue is whether the setting of whole-school targets is supportive of the learning of each child.

Implications of Targeting Knowledge

In their public form, targets are about the knowledge which pupils should acquire by certain stages in their educational careers. In mathematics it is assumed that mathematical concepts can be formed into a hierarchy of knowledge which is the same for each child, which is a questionable assumption.[3] But even if this were true it is not obvious how such a hierarchy would or should map onto a pedagogical sequence, as few would argue that the structures of knowledge in any discipline correspond straightforwardly with the ways that individuals set about mastering that subject.

In order to measure pupils' achievement we must measure or test a selection of specific skills or knowledge. In a 'high stakes' environment, where pupil achievements are used for 'accountability,' there are well known issues concerned with an undue concentration on preparation for the test and neglect of important aspects of learning. In the next two sections we explore this in some detail and relate these concerns to our case studies.

Contextualisation of Results

Teachers, schools and LEAs are to be held accountable for how closely they reach the set targets which will thus be functioning in the same way as test score and examination 'league tables'. The advice to teachers and governors from the DfEE is that targets should be set by studying the achievements of 'similar' schools and attempting to move towards the most 'successful' of these. Currently, 'similarity' is judged in terms of the percentages of children eligible for free school meals and on some incomplete sets of data about the pupils' prior attainment. A full 'value-added' analysis, based around individual pupil data, is recognised as a necessary condition for satisfactory comparisons between schools. Alternatives which utilise *average* intake scores for chosen cohorts of children are inadequate, both because such aggregate level data lack specificity and because of pupil mobility between entry to the school and the time of the test scores. Research by Goldstein & Spiegelhalter, reported in 1996, demonstrates that pupils' prior achievements are the single most powerful indicator of later academic achievement, so that it is necessary to relate the test scores of the *same* pupils at intake and outcome times. Moreover, Goldstein & Sammons (1997) showed that adjusting for intake scores at just one previous point in time may be inadequate and, for example, for the purpose of assessing the performance of secondary schools it is important to take into account performance at the age of 8 and the primary school attended.

There are, therefore, clear difficulties in reporting schools' academic performance using value added adjustment procedures, especially where pupil turnover is high. In one of the pilot schools, for example, between 30–40% of the pupils on roll have changed between years 7 and 11. Another factor is the statistical effect of small sample sizes, especially true in small schools. After the best possible value-added analysis most schools cannot be distinguished from the average (Goldstein & Spiegelhalter, 1996).

The manner in which test scores are reported can also

conceal the fact that many schools are 'differentially effective' (O'Donoghue et al, 1997). For example, some schools have high value-added scores for initially high-achieving pupils but low value-added scores for initially low-achieving pupils etc.

Moving Targets

The Government White Paper (DfEE, 1997) sets the target for year 6 in 2002 that 75% of pupils will reach the standard expected for their age (level 4) in mathematics. This target is highlighted whenever results are reported, usually referring to mathematics as 'numeracy'. We must assume that the White Paper regards level 4 as a standard that, in a well-functioning system, virtually all pupils should reach. How was this standard conceived and can it be maintained consistently over time? A national system of testing was originally recommended in the Task Group on Assessment and Testing (TGAT) Report (DES, 1988, para 108) where it was stated that 'the *average* for an age 11 pupil will be level 4 or more'. It was never made clear whether this was intended to be maintained over time. It is meaningless, as the DfEE 1997 White Paper claims, to contrast, in 1996, the 82% of 7-year-olds who achieved the target of level 2 or above with the 52% of 11-year-olds who achieved level 4 or above. Such differences are as much a function of test design as any 'real' differences. For example it is possible that the introduction of the mental mathematics test in 1998 was a large contributory factor behind the lower SATs scores among 11-year-olds that year. In 1999, after an emphasis by teachers on mental mathematics, the percentage of year 6 pupils achieving level 4 increased considerably.

This latter observation highlights an important point which, although not a focus of this article, is worth bearing in mind. The reification of targets as a central goal of education, tends to obscure and even stifle debate on whether the targets themselves are consistent with acceptable educational objectives. It may be that it is right to sacrifice children's broader mathematical achievement in order to enhance scores on targets which narrowly construe mathematics as numerical facility. We do not happen to agree. But we can, surely, agree that it is important to be aware of the sacrifice, and to discuss its broader educational implications.

A final point on targets themselves: Targets will move in response to curriculum change. The revised mathematics programmes of study for secondary schools from September 2000, following on from the introduction of the National Numeracy Strategy in primary schools from September 1999, are likely to affect expected levels of achievement and their interpretation.[4]

Targets for the Whole School and for Individuals

In the DfEE document, *Excellence in Cities* (DfEE, 1999), there is a recognition that target setting must not stop at whole-school level but should accompany the close monitoring of every pupil:

> *Getting the system right can only be a first step. We must take an individual as well as an institutional perspective ... Individual planning, target-setting and monitoring of pupil progress need to apply to every pupil and not just those with special educational needs.*

Several important developments have taken place in each of the pilot schools in response to the need to raise achievement and, as part of that process, to set and review regularly the targets set in a range of subjects for individual pupils. There is a current focus on year 11 pupils for whom targets were set in 1998 for their GCSE results in 2000, but schools have also projected ahead on the basis of assessments of younger pupils. Difficulties in making predictions, for which teachers will be held accountable, were expressed during all the interviews. Guidance about subject-specific targets was not, at the time of the study, available from LEAs. Targets for GCSE results are often expressed across all subjects, such as in the schools where pupils are allotted a 'target minimum grade'. There is sometimes pressure from head teachers and governors to set targets at a higher level than previous assessments have indicated since theirs is the responsibility to balance the demands of public accountability with the support for teaching and learning within the school.

Support for individual pupils to understand and achieve their targets includes once or twice-yearly academic mentoring, in the presence of a parent whenever possible. The interviews are with the form tutor who has information about attainment in most subjects, including mathematics. The degree of detail from class teachers to form tutors is increasing with more of a subject-specific focus rather than background factors. Teachers whom we interviewed expressed an awareness of how targets for the whole school are achieved through the efforts of individual pupils. The need for more frequent mentoring which would be provided by the class teacher is seen as the way forward by heads of mathematics and by senior managers within the sample interviewed. For example:

> *Targets are as useful as the review and evaluation which follows. One aspect which I hope will start to become departmental practice is a micro target-setting process actually within the teaching. (Deputy Head, March 1999)*

In another school there are developments towards recording targets in pupils' weekly planners which are seen by form tutors and parents. They are intended to be closely related to the mathematical learning objectives within the schemes of work. They are part of the larger picture of targets for the class, the year group and the school, but they are individual for each child.

Conclusions

It is apparent from our, albeit limited, study that some teachers are seeking ways of reconciling the external pressures for specific targets with their responsibilities to enhance the overall learning of all students. This results in explicit attempts to record achievements and to try to involve parents in this process as well as the pupils. Because it is centred around the need to satisfy particular targets it tends to function in a different manner to traditional 'record of achievement' schemes which are generally more wide ranging in what they record.

To some extent, the increased documentation which this produces can be viewed as a means by which individual teachers, departments, or schools can demonstrate their adherence to the target setting protocols. They could be used conceivably as 'defence' documents if things are seen to be 'going wrong', for example targets not achieved. Clearly, such a bureaucratisation of learning carries dangers of resource wastage, unwillingness to take risks and possibly disincentives for students. We have already suggested the possibility that undesirable curricular distortions have occurred in relation to the SAT scores. These dangers are also present of course in an overly explicitly defined National Curriculum, as these are aimed at pupils *in general*. On

the other hand, we accept that a move towards defining targets for *individual* pupils can be helpful in allowing for the careful monitoring of performance and learning and providing a means to enhance it.

Obtaining a suitable balance between these negative and positive aspects of target setting may not be easy and it is a problem which government in particular should be concerned with. It is something that teachers and parents will increasingly have to face up to and for which they will need appropriate external support.

Notes

[1] Details of this target setting process, together with the Government's justifications, can be found on the DfEE Standards and Effectiveness Unit web site, http://www.standards.dfee.gov.uk. A useful summary can be found in the guidance for governors (www.standards.dfee.gov.uk/library/publication/achievement).

[2] Details of this pilot study can be found in Tikly (1999).

[3] See Noss et al, 1989.

[4] The responses to consultation about Curriculum 2000 include a significant comment from the National Association of Mathematics Advisers. 'At key stage 3 the programme of study is exceptionally detailed and specific, reflecting most of the level 7 requirements. Level 5 is the current expectation for the majority of pupils. We all know the perils of cramming too much too soon' (QCA, 1999).

References

DES (1988) *National Curriculum: task group on assessment and testing.* London: Department of Education and Science.

Goldstein, H. & Sammons, P. (1997) The Influence of Secondary and Junior Schools on Sixteen Year Examination Performance: a cross-classified multilevel analysis, *School Effectiveness and School Improvement*, 8, pp. 219–230.

Goldstein, H. & Spiegelhalter, D.J. (1996) League Tables and their Limitations: statistical issues in comparisons of institutional performance, *Journal of the Royal Statistical Society, A*, 159, pp. 385–443.

DfEE (1997) *Excellence in Schools.* London: Department for Education and Employment.

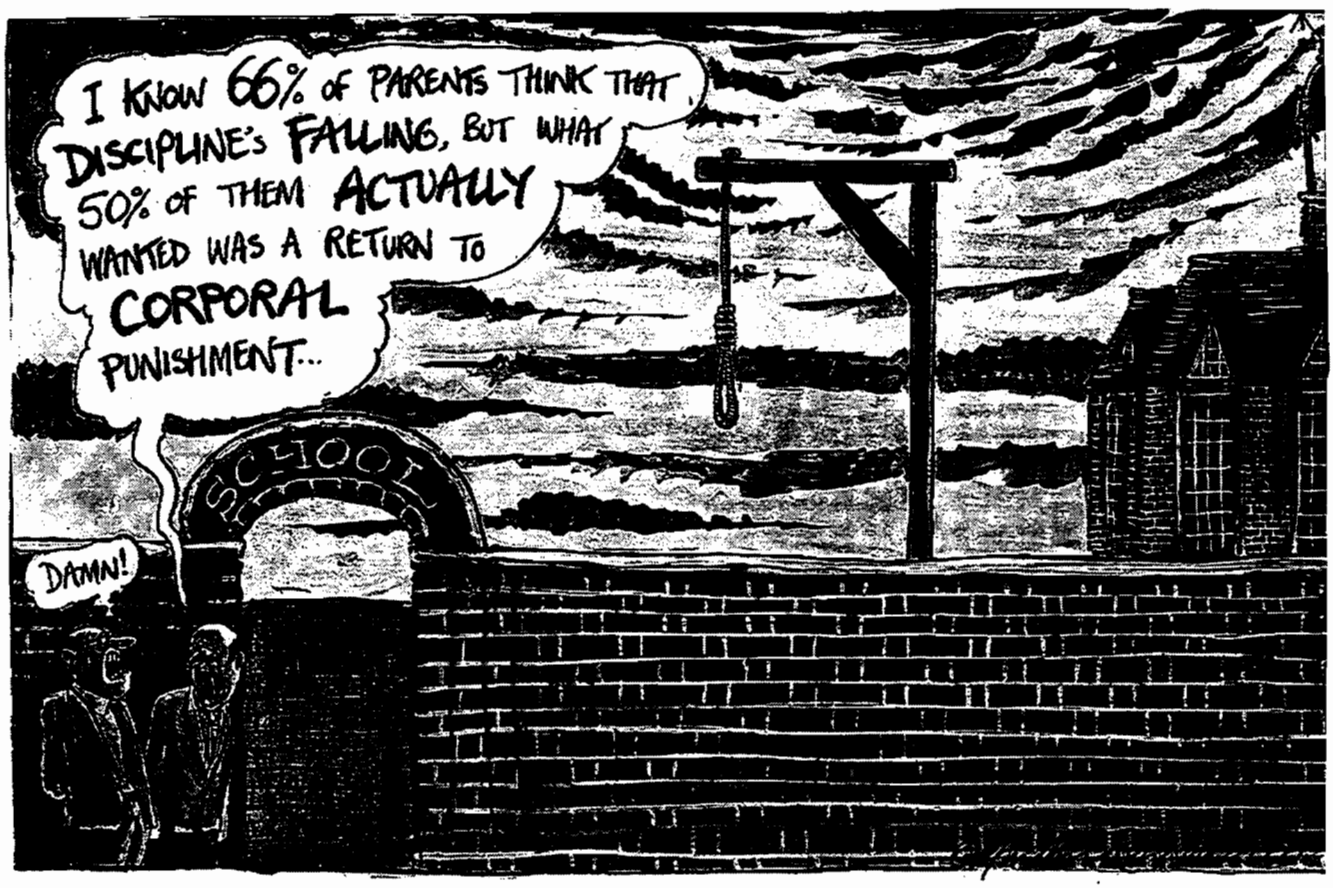
DfEE (1999) *Excellence in Cities.* London: Department for Education and Employment (http://www.standards.dfee.gov.uk/library/publications/excellence).

Noss, R., Goldstein, H. & Hoyles, C. (1989) Graded Assessment and Learning Hierarchies in Mathematics, *British Educational Research Journal*, 15, pp. 109–120.

O'Donoghue, C., Thomas, S., Goldstein, H. & Knight, T. (1997) *DfEE Study of Value Added for 16–18 Year Olds in England.* London: Department for Education an Employment and Institute of Education (http://www.ioe.ac.uk/hgoldstn/#download).

Qualification and Curriculum Authority (QCA) (1999) *Developing the School Curriculum.* London: QCA.

Tikly, C. (1999) *Target Setting in Mathematics.* London: Institute of Education.



Martin Rowson, *The Times Educational Supplement*, 7 January 2000