

Abstract

This paper presents an analysis of a design and technology department's assessment, reporting and recording system, together with a comparison of a similar school, with proposals for change and a plan for implementation.

Assessment, recording and reporting are key aspects to the teaching of design and technology and are inextricably linked to curriculum development (Kimbell, R., 1997: xiv). Therefore, the assessment policy of any department provides a key focus for raising standards of achievement and developing change in the curriculum. Assessment has many aims, it is for:

- selection
- prediction
- diagnostic
- motivation
- formative
- guidance
- summative
- evaluative (Parkside School/Durham County policy).

I shall compare how these are used in two schools – my own, Parkside, and an 11-16 comprehensive with a similar socio-economic background, Belmont, with particular emphasis on the formative and summative aspects. As a result of this analysis, I will explore proposals for appropriate changes at Parkside and suggest a plan for implementation.

Initially, both schools determine their Key Stage 3 structure by using Key Stage 2 assessment data and recommendations from Key Stage 2 teachers. It is important to understand the results of this selection process as they have a distinct influence on the reporting systems explored later. The following points summarise each school's approach.

Structure of Key Stage 3 at Parkside

- Key Stage 2 data used by head of year to divide 180 pupils into six mixed ability tutor groups and seven ability based teaching groups.
- Each year group halved for timetabling into X and Y:

| X | Y |
|---------------|---------------|
| 2 upper bands | 1 upper band |
| 1 middle band | 1 middle band |
| 1 lower band | 1 lower band. |
- Design and technology then divide each half year into five mixed ability mentor groups ensuring that any students with

special educational needs are distributed evenly.

- Pupils tested using middle years information service (MidYIS) system in November – results plus teacher assessment used to identify any movement necessary between bands.

Structure of Key Stage 3 at Belmont

- Key Stage 2 data used by head of year to divide pupils into six mixed ability tutor groups in which pupils are taught during Year 7.
- Some setting takes place in maths, French and science from Year 8.
- For design and technology, the year group is halved and each divided into four mixed ability groups.

This Key Stage 2 data, in addition to being used for selection in both schools, is also used by Durham Local Education Authority (LEA) as a predictor to set school targets for Key Stage 3. At Parkside, the senior management team (SMT) then set Key Stage 3 departmental targets in the core subjects and in any subject giving cause for concern – not design and technology at present! Belmont has a similar system.

Parkside introduced the middle years information system of testing pupils in Year 7 three years ago. This system gives predicted grades for Key Stage 3 SATs in core subjects and GCSE grades in every subject. We have not yet had a cohort pass through a national test so have not fully evaluated its effectiveness. However, it could prove very useful in establishing individual targets for Key Stage 4 pupils in design and technology and for assessing 'value added scores' (particularly important in these days of performance related pay!)

Summative reporting at Key Stage 3 has been developed, in both schools, from the Durham LEA policy document issued in 1991 and from changes introduced by the Government in the Reporting to Parents booklet issued in 1995. Initially, Parkside adopted a whole staff approach to the production of the policy but recent reviews have been carried out by the SMT. The system of at Parkside only includes reporting an attainment grade, not effort, on the interim records of achievement (ROAs), despite recommendations in the Government document, due to the strongly held views of our current headteacher.

Initially (pre-1998) these attainment grades indicated:

- A good work
- B satisfactory work

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Figure 1.

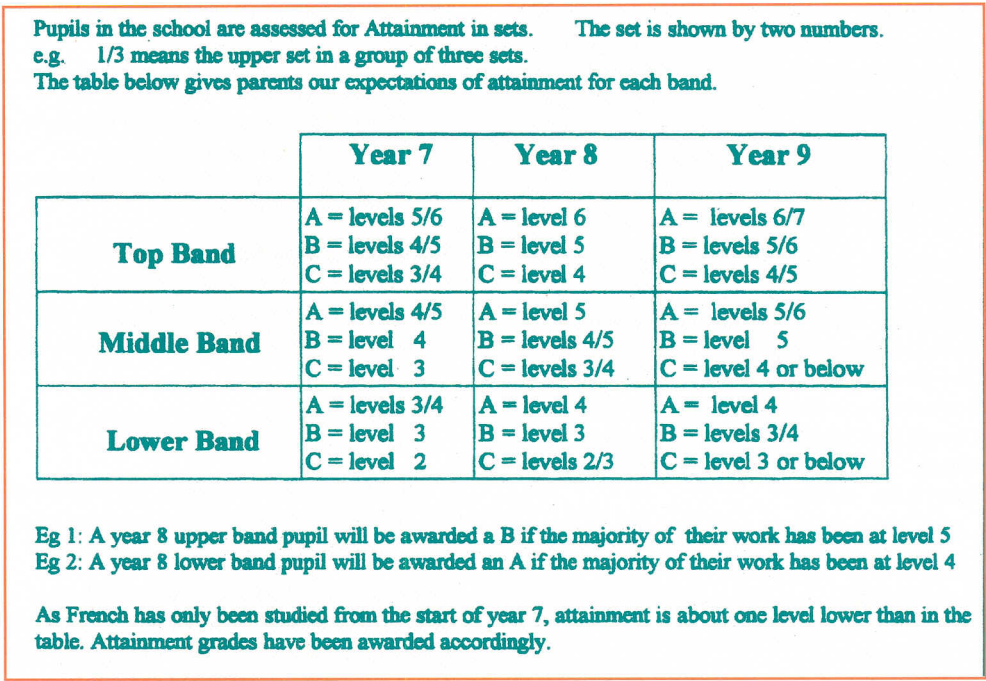


Figure 1b.



Figure 1c.



C less than satisfactory work – within the band in which the pupil was working.

These grades have then been modified by the SMT, in response to the Government recommendations, to report attainment related to National Curriculum levels as shown in Figure 1a.

Whilst the reporting policy was being developed, staff workload was also taken into consideration and the following timetable for the issue of ROAs emerged (see Figure 1b).

This is well liked within the school and unlikely to receive support for change. However, the changes to the meaning of reported attainment grades, combined with the timing of ROAs, have created problems for the design and technology department due to the method used for delivery of the design and technology curriculum. This method provides an integrated approach to all the material areas, and although not perfect, is generally

felt to give the best approach possible within the staffing and timetabling constraints at Parkside (Figure 1c).

Key Stage 3 delivery model for design and technology at Parkside

- All pupils do FPTs each year in mentor groups.
- Pupils work in a different material area for each DMA over Key Stage 3.
- DMAs are assessed for National Curriculum levels.

As you can see, we do not have a problem in Year 7 as the ROA is issued in July and based on Year 7 design and make assignments (DMAs). However, in Year 8, ROAs are written in January – only six months after Year 7 – and the pupils have not yet experienced any new DMAs. Consequently, grades are based on Year 7 projects but use

| Pupils are taught in mixed ability groups. | | | |
|--|---------------------------------|---------|---|
| QUALITY OF WORK: | | EFFORT: | |
| 1 | Excellent | 1 | Excellent |
| 2 | Good | 2 | Good |
| 3 | Satisfactory | 3 | Satisfactory |
| 4 | Work is not always satisfactory | 4 | Variable effort - needs to be more consistent |
| 5 | Poor | 5 | Insufficient effort - needs to try harder |
| R | Referred | R | Referred |

Figure 2a.

| | | | |
|------------|------------------|---------------|---------------|
| | January/February | May | July |
| Years 7-10 | Interim report | | School report |
| Year 11 | School report | Summative ROA | |

Figure 2b.

Year 8 criteria resulting in the following situation in 1998:

- 1998 – Year 8 mentor group (17 pupils)
- 2 As (lower band pupils)
 - 3 Bs
 - 12 Cs

Assessment provides a vehicle for motivation if it emphasises achievement, but this situation was definitely de-motivating! One upper band pupil expressed her view, ‘it doesn’t matter if the comments are good, my parents only look at and remember the grade’. I, and the other design and technology staff, tended to agree and following several consultations with the SMT, now report ‘working towards’ grades rather than ‘working at’ in Years 8 and 9. The fact that we work in mixed ability groups also complicates the system. Grades have improved following this change but if we were able to report an actual level number plus a ‘quality of work’ and ‘effort’ grade, I feel we could give a much ‘rounder’ view of the pupils’ progress to parents.

Belmont School’s policy was originally based only on reporting effort grades to parents. This has been developed to include grades for quality of work, as shown below, with National

Curriculum levels being reported only at the end of the key stage (see Figure 2a).

Timing of reports remains broadly in line with the traditional end of year report as shown. This creates a high workload for staff but parents appreciate the end of year timing and mid-year summary (see Figure 2b).

Design and technology is delivered as shown with DMAs assessed for National Curriculum levels. However, this fits in well with the school system so has not created any problems here (see Figure 2c).

Key Stage 3 delivery model used for design and technology at Belmont

Having considered the two systems I felt that I was only receiving one view – that of the teachers’ – so I decided to develop a questionnaire that could be used to discover pupils’ views. This became quite an extensive document from which I will take sections as they become relevant. I surveyed all 360 pupils in Years 8 and 9 at Parkside, but was only able to get information from one Year 9 group (18) at Belmont. Time restrictions meant that I could only analyse 50 Year 8 and 50 Year 9 pupils from Parkside selected at random from the answers received. Hopefully

| | Academic year | |
|---------------------------------------|--------------------------------|--------------|
| Year 7 – 1 hour p/wk – 1 hour p/wk | Food DMA ‘Core’ FPT and DMA | Textiles DMA |
| Year 8 – 1 hour p/wk – 1 hour p/wk | Food DMA ‘Core’ FPT and DMA | Textiles DMA |
| Year 9 – 1 hour p/wk – 1 hour p/wk | Food DMA ‘Core’ FPT and DMA | Textiles DMA |

Figure 2c.

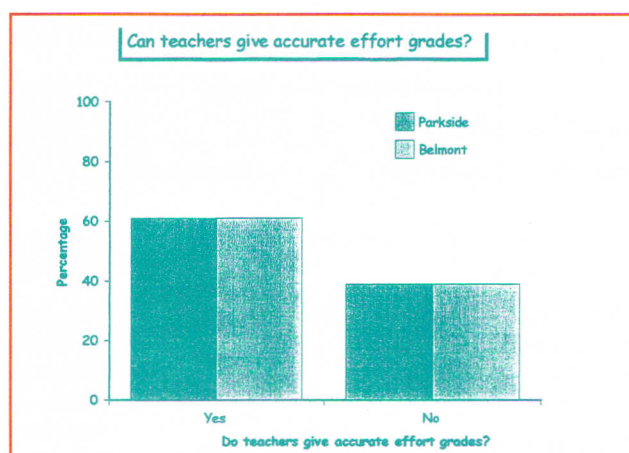
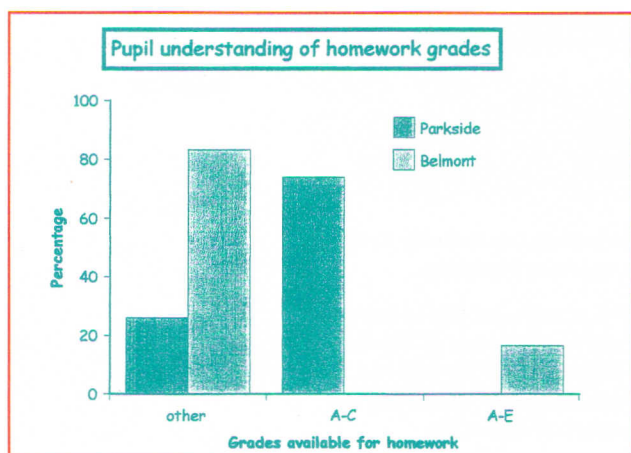
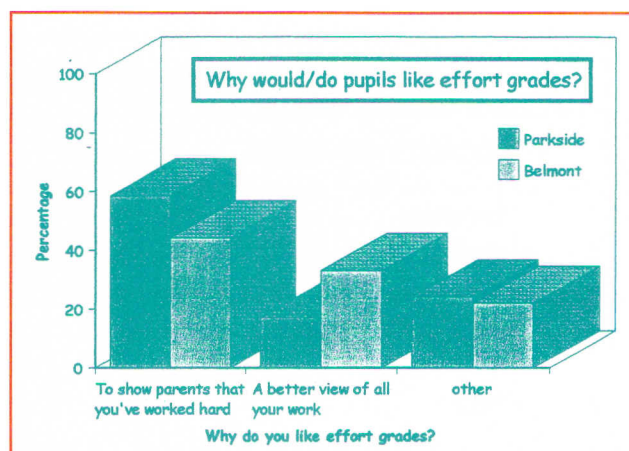
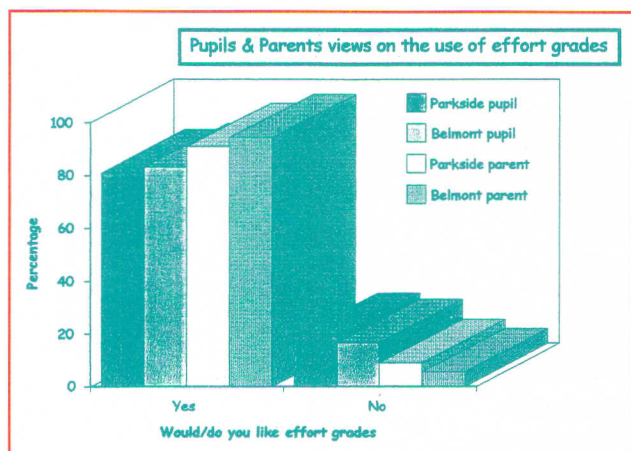


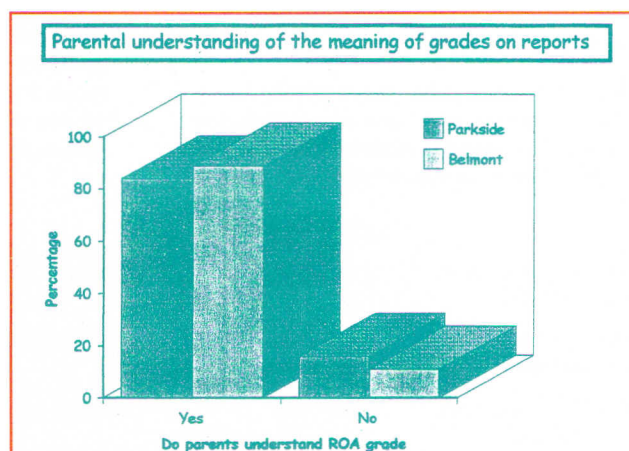
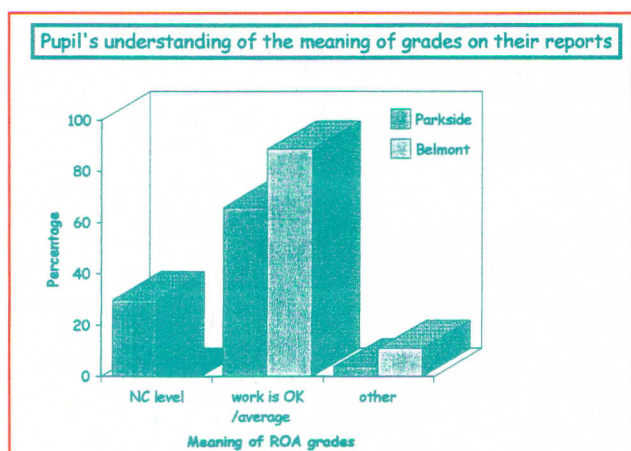
Figure 3, 4, 5 and 6

I shall be able to do the rest at a later date (see Figures 3 and 4).

As expected, Belmont pupils had a good understanding of the meaning of their report grades, but only 30% at Parkside made any reference to National Curriculum levels. Pupils in both schools, however, thought that their parents understood the grades. This suggests that there is some work to be done with pupils at Parkside. When asked about effort grades, as can be seen, pupils gave positive opinions (Figures 5 and 6).

Figure 7 and 8

The reasons given are in line with my own view of giving a better all round picture of a pupil and, I believe, form a basis for suggesting change at Parkside. Formative assessment, used to guide pupils towards making improvements in their day-to-day work and focused practical tasks (FPTs) in technology, is based on a five-point scale (A, A/B, B, B/C, C and A-E) in both schools. However, Belmont also gives an effort grade for homework (Figures 7 and 8).



| | | level 3 | level 4 | level 5 | level 6 | level 7 | level 8 |
|-----------|-------------------------|---------|---------|---------|---------|---------|---------|
| Designing | Problem | 1 | 1 | 1 | 1 | 1 | 1 |
| | Research | | 1 2 | 1 2 | 1 2 | 1 2 3 | 1 2 |
| | Ideas | 1 | 1 | 1 | 1 2 | 1 2 | 1 2 |
| | Development | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 3 | 1 2 | 1 2 |
| Making | Planning | 1 2 | 1 | 1 2 | 1 2 | 1 | 1 |
| | Measuring / Marking Out | 1 | 1 | 1 | 1 | 1 | 1 |
| | Manufacture | 1 2 | 1 2 | 1 2 | 1 2 | 1 | 1 |
| | Evaluating | 1 2 | 1 | 1 2 | 1 2 | 1 2 | 1 |

[illegible]

Summative assessment is used to provide National Curriculum levels for reporting and is based around DMAs in both schools but, obviously, each has devised its own method of recording these. Kimbell advocates giving a holistic level initially, then comparing it to the level descriptors on either side, before examining the details, hopefully to confirm the judgements made. This view was developed as a result of work carried out by him in the Assessment of Performance Unit Project 1985-91 (Eggleston, J., 1996: 58-61). This project provided evidence that focusing too much on detail gave unreliable results. When the National Curriculum assessments required schools to make assessments against

Assessment should ‘not make excessive demands on time or resources’ (Parkside whole school policy, 1995: 2) and both design and technology policies have endeavoured to satisfy this. At Belmont, the design and technology staff took the eight aspects of technology identified by The National Association of Advisors and Inspectors in Design and Technology (NAAIDT: 100).

Figures 9 and 10.

[illegible]

Designing:

- clarifying the task
- generating ideas
- developing ideas
- communicating intentions

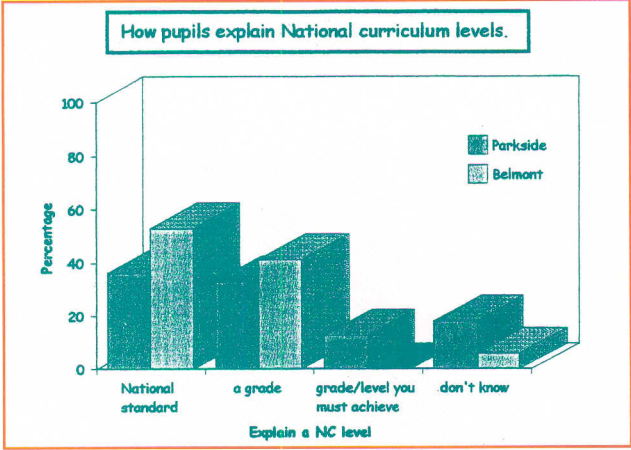
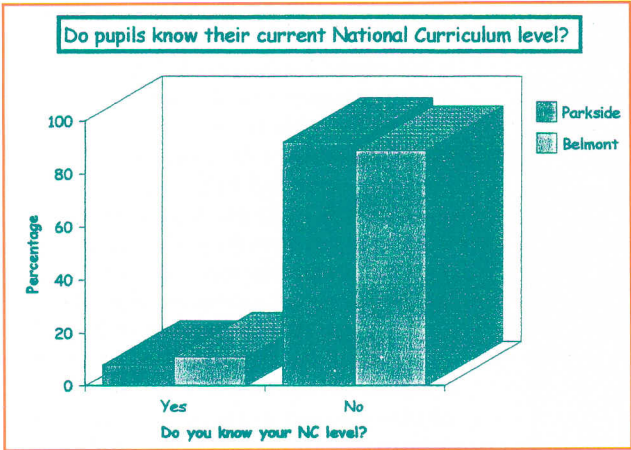
- planning
- working with materials
- health and safety
- evaluating

A record sheet is also used to indicate which areas and products the pupil has worked in and to record formative grades for each design and make assignment (see Figures 9 and 10). Belmont design and technology department have also introduced the awarding of a grade for behaviour to try and encourage a safe atmosphere. This is seen as a positive grade to reward good behaviour rather than a negative punishment for poor behaviour. These record sheets are stored by the pupils in their folders so that they have constant access to the information.

A tracking sheet is maintained for each mentor group showing where pupils have worked and their current level. This sheet is very useful as it quickly identifies any pupils not making sufficient progress and giving cause for concern. These two sheets are stored by staff and can only be accessed by pupils on request.

Pupils also had a similar understanding of the meaning of National Curriculum levels in both schools.

In the most recent OFSTED report for Parkside (February 1998) pupils' understanding of examination grades and National Curriculum levels for the design and technology department was identified as needing improvement in order to help them



Figures 13 and 14.

set targets for improvement. Clearly some work needs to be done in this area.

Within our design and technology assessment policy at Parkside is a section on 'Involving the Pupils'.

'It is considered very important that pupils understand the assessment criteria ... and that they be encouraged to undertake both self-assessment and peer-assessment.'

In the food area we encourage self/peer assessment when time allows but I do not think that much happens elsewhere. The pupils, as can be seen below, supported this view. They are fairly evenly divided over whether they should grade their own work but the majority in both schools felt that if they did it would help them to improve their standards (see Figure 15).

This shows (see Figure 16) that it is certainly an area to consider for development if pupils feel that they could improve their work. However, some careful thought will have to be done to establish the best approach.

As a result of this analysis of the two school systems, I have identified the following areas where change may be appropriate at Parkside.

- Whole school**
- Addition of effort grades to ROA.
 - Clarification of reporting of levels.

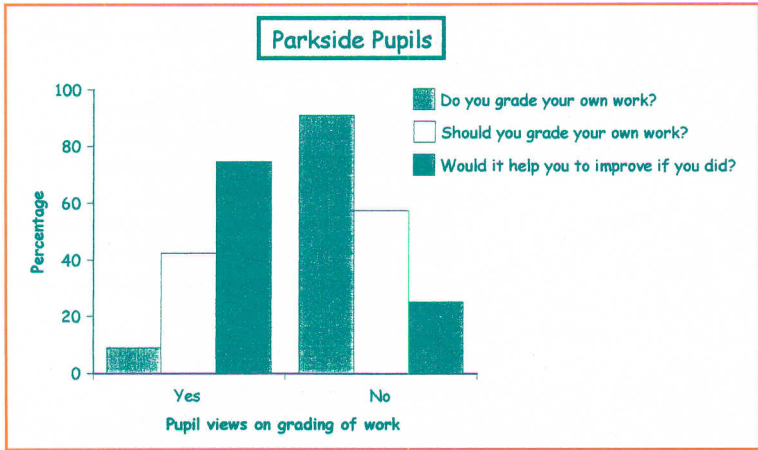
Changes to whole school policy are unlikely to occur in the immediate future as we are in the process of appointing a new headteacher. However, all policies are likely to be reviewed and the SMT may be receptive to reasoned arguments for change. The vast majority of pupils would like to see an effort grade on their ROA as they feel it would show their parents they had been working hard even if they had not attained a particularly high standard. I agree with this as I feel the grades we have been giving some pupils do not reward them for the amount of work they have been doing. This is also in line with

recommendations identified in the DATA *Assessment Handbook* (p.60). I also feel that a straightforward level number, as used at Belmont, could be less confusing on a ROA but this may need further investigation to discover if parents fully understand the current system. Perhaps a survey could be carried out during parents' evenings.

To implement this suggestion would initially involve presenting a report to the new SMT and, if they approve, moving forward to canvas the views of other departments in the school. They may not wish to have to consider extra grades for ROAs. I have considered suggesting that parents are given a copy of the internal progress reports we currently complete, but due to the spread of timings for issue of ROAs, this may not work too well in practice.

- Department**
- More emphasis on 'holistic' assessment.
 - Modification of assessment criteria in line with new orders.
- A new assessment form will be needed to take account of the new orders from September 2000. I feel that this may be an opportunity to examine all aspects of assessment and develop those that are not working as well as might be

Figure 15.



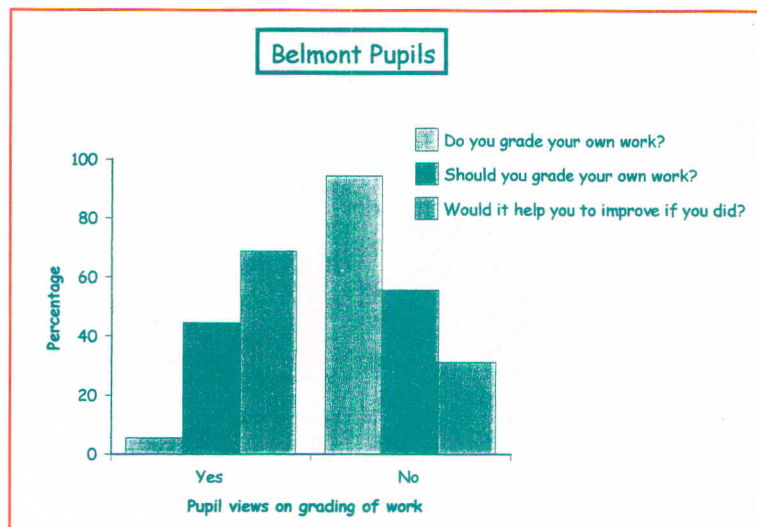


Figure 16.

expected. In line with the views expressed by Kimbell, we have had problems with National Curriculum assessment when overly concerned with minute detail. Consequently, it may be beneficial to consider assessing a DMA on a holistic level initially and then checking details to confirm/refute the decision. However, the current system is straight forward to complete (*DATA Secondary Head of Department Handbook*, 1997: 3.4.10) and if the holistic aspect was emphasised through an INSET session, further development may prove unnecessary.

- Increased pupil awareness of:
 - criteria
 - current performance standard.

Pupil awareness of current levels is a difficult problem to address. In the past, pupils were given individual copies of their progress sheets (which proved very costly to duplicate) but found them difficult to understand and they were prone to being lost. This system is adopted at Belmont (where the department does not have to fund duplicating costs directly from their budget) but does not seem to generate any greater knowledge of current National Curriculum levels. The present system of information being kept by the mentor is safer but communication between staff and students is poor.

Active participation tends to encourage retention of knowledge so one way forward may be to ask the pupils to record their own levels from each DMA, on a sheet stored in their working folders, and to add a comment about the work completed. This could be combined with information about the criteria on which the levels are judged.

- Increased pupil participation – quality/effort grades.

Pupil involvement is clearly stated as being desirable in our policy but from the questionnaire results it can be seen that it is limited at present. I would like to see this area developed as without understanding; pupils find it difficult to make progress. If a record sheet was introduced for the pupil to complete, this could also incorporate some self-assessment from the pupil to encourage them to examine why they had not reached a higher level and to set realistic targets for improvement. Indeed, a member of Parkside design and technology staff did some research into pupil self assessment in the late 1980s and found no significant statistical difference between the grades given by the pupil or teacher (Hattle, 1986). However, the system was 'innovative' at the time and was not adopted, but it may provide some useful reference points if this aspect is investigated further.

- Introduce target setting for individual pupils:
 - system for monitoring and evaluating.

On a departmental basis, it would be interesting to discover if we could use Key Stage 2 data/ MidYIS testing to identify targets for individual pupils at Key Stage 3, but this seems unlikely as we only have core subject assessments to work with. However, we could certainly introduce these next year at Key Stage 4 using the initial set of MidYIS data. A monitoring and evaluating system would also need to be developed to ensure good use was made of the data to identify pupils who were underachieving or insufficiently challenged ([www.standards site/OFSTED](http://www.standards.site/OFSTED) report)

- Transferring record keeping to ICT format

Perhaps it may also be possible to introduce an ICT based system where pupils could access their latest levels (on a read-only basis) and identify targets to work towards. A reference system of standards expected for each level could also be developed and stored with paper copies available for those who are unable/unwilling to gain access to the network system. This would encourage increased use of ICT systems in line with the new curriculum orders and can be an effective means of keeping and updating records centrally for staff. Security and confidentiality issues would have to be considered, as would staff training, before implementing this.

- Exemplar work.

In line with school policy the design and technology department need to build up a departmental folder of exemplar work showing each of the expected standards for a

level. This should not prove too onerous if carried out during the summer term, as all years will be completing a project for National Curriculum assessment.

One aspect, which has been difficult to provide evidence for, is the actual product, as these are generally taken home. However, we now have access to digital cameras and can build up pictures, such as the example shown, to match written work.

This process could be carried out by individual staff on a material basis and then be considered at the annual Key Stage 3 standardisation meeting for adoption as a departmental standard. If this work was placed on the computer network, along with a recording system, pupils may be motivated to 'have a look' when resources are available. It would also provide some 'real' ideas about what the 'criteria' mean if notes were added indicating why a piece of work did or did not meet a certain standard.

Plan for implementation

Whole school

- Identify relevant information from questionnaire and present argument to new headteacher/SMT for consideration of introduction of effort grades to ROA:
 - involves production of a report and discussion with SMT.
- Examine parental understanding of system of reporting grades on ROA:
 - a survey of parents could be conducted during parent's evenings
 - results would need to be collated and a report written.
- Whole staff discussion on issues raised would be needed if results of survey and discussions with SMT indicated change to be desirable.
- ROA formats would need to be changed if proposals are implemented.

Department

- Modify pupil assessment sheets in line with the new orders (this will have to be done by the HOD for September 2000):
 - re-emphasise the importance of the holistic approach to assessment to the design and technology department.
- Develop record sheet for pupils to complete and store in folders – include National Curriculum criteria in understandable format:
 - consider incorporating a system for pupil self assessment



Figure 17: Year 7 DMA, 'The Young Child, Level 4.

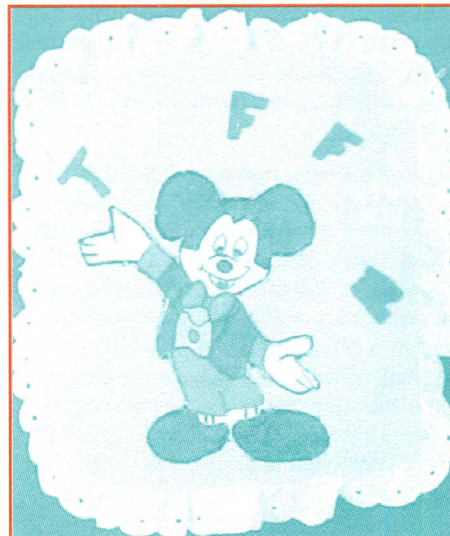


Figure 18: Year 8 DMA, 'Disney', Level 5/6.

- introduce to Years 7 and 8 at the end of the summer term, July 2000.
- Introduce individual target setting on departmental basis, initially at Key Stage 4 using Key Stage 3 and MidYIS data from September 2000:
 - develop recording and monitoring system to ensure these are used effectively.
- Build up a set of exemplar work in line with school policy:
 - this would involve all staff identifying work in different materials and then a meeting for standardisation – Summer term 2000.
- Develop ICT method of storing records:
 - consider aspects of security and confidentiality in relation to allowing access to pupils

- transfer exemplar material to network with explanations of how it did/did not meet criteria for different levels
- ask for ICT technician time to be available for help with development
- training would be needed once the system was in place and time allocated to explain to pupils how to access information.

To adopt all of these changes would require a large input of development time. The whole school policy changes would necessitate some more evidence being collected and then have to be discussed by the whole staff. If agreed, it would then necessitate the changing of the format of every ROA. This is an onerous task but is actually going to be done over the next academic year as the word processing program used is being changed. Perhaps these suggestions should be discussed now! Apart from staff time, other resource costs should be minimal.

I feel that these suggestions would address some of the issues identified in my analysis, improve the understanding of the pupils and hence, hopefully, their level of motivation and achievement. I also believe that staff would feel more comfortable with the assessment process and have more confidence in the accuracy of the grades they are reporting. An improved understanding of the reporting system by pupils and parents can only help to give a better view of progress and help with the identification of targets.

Information and communications technology (ICT) is certainly the way forward in many aspects of the curriculum and the Government is commending any encouragement of its use. Access to ICT is improving at Parkside and I believe it will be the vehicle for delivering more and more information in the future. Despite involving a large time cost, I'm sure the proposed record and information system is the correct approach to adopt.

As quoted earlier, 'assessment, recording and reporting are key aspects to the teaching of design and technology and are inextricably linked to curriculum development' (Kimbell, R., 1997: xiv). My investigations have certainly demonstrated this to be correct and I hope that some of my suggestions are implemented to produce curriculum development and improve pupil achievements.

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