Perils of assessment?

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With the implementation of the General Certificate of Secondary Education (GCSE), many schools are looking carefully at their provision for laying a sound foundation of knowledge and skills to enable their pupils to cope with the demands of the new examination. This process is happening in all subject areas but particularly in Craft Design and Technology (CDT), where there appears to be considerable debate as to what should be included in a structured foundation course, (Kimbell, 1982; Williams, 1985; Finney and Fowler, 1986; Department of Education and Science; 1987). There is consensus however, on one point, that the pupils need to be assessed and informed of their performance and progress in their work at all ages, not just at examination level. This article is based on a research project, attempting to provide through action research in five Nottinghamshire schools, a feasible package of assessment for a CDT foundation course, evaluated in terms of the effect that it has on teachers, pupils and parents by exploring their views through a variety of questionnaires and interviews.

The fact that there is only one piece of research work available at present on assessment in CDT (Johnstone, Reeve and Dick, 1985) reflects the need for more debate and development of ideas in schools (Williams, 1985). The idea of the development of a *feasible package of assessment* is given support by Her Majesty's Inspectorate (HMI) through Craft, Design and Technology 5 to 16, DES (1987), who argue that any assessment should be beneficial in some way and that it should not be so complex or detailed to make its implementation overshadow essential features of the teaching/learning process (p.21).

Due to the nature and possible complexity of the project it was decided with the schools that the focus for the research would be on first year pupils, whose parents in the main had not experienced the effects of the industrial action. This meant that the target population from the five schools for the project was 761 pupils.

It was felt at the outset of the research that it would be important to obtain the views, ideas and aspirations of the teachers, pupils and parents involved in the project, before developing and

putting forward ideas for consideration. Also a review of existing policy and practices was deemed to be important from the schools directly involved in the project and from a wider audience to give a more holistic picture of CDT assessment practices in Nottinghamshire schools. The model of assessment would respond hopefully to this holistic view being descriptive in character rather than being prescriptive and adaptable to suit or fit any CDT department or indeed any other subject area on the curriculum. The methodology adopted for the whole study is shown as Figure 1 with this article being directed towards the initial stages responsible for the development of the assessment package in each school.

There seems little doubt that the inclusion of a profiling or system of assessment on an existing curriculum structure, could present problems. (Cowton 1983). There must be a shifting of emphasis so that teachers regard assessment as a part of the process of learning rather than a chore (Brown,

1985; Spooner, 1983). If teachers of CDT wish to provide a fitting and full education through their subject for all pupils, then, according to the Department of Education and Science (1981), they will have to be able to recognise and then develop the individual potential of each pupil. This implies structured assessment in order to encourage and direct the effort that the pupils will have to make in their self-directed learning, and make the teacher more accountable to both pupil and parents in what and how the subject is taught.

In his thesis, Cowton (1983), discusses eloquently the debate on profiling and assessment and its historical background. But perhaps more significantly he outlines what the aims of any system of profiling/assessment should contain. The ones pertinent to this study were:

1. Involve learners in the learning process and try to provide feedback.
2. Provide documentation for external use/consumption.
3. Provide a more meaningful end of course review.
4. Create a basis for active tutoring.
5. Monitor progress with reference to specific criteria.

Figure 1. Methodology adopted for the generation of an assessment package for CDT and its evaluation.
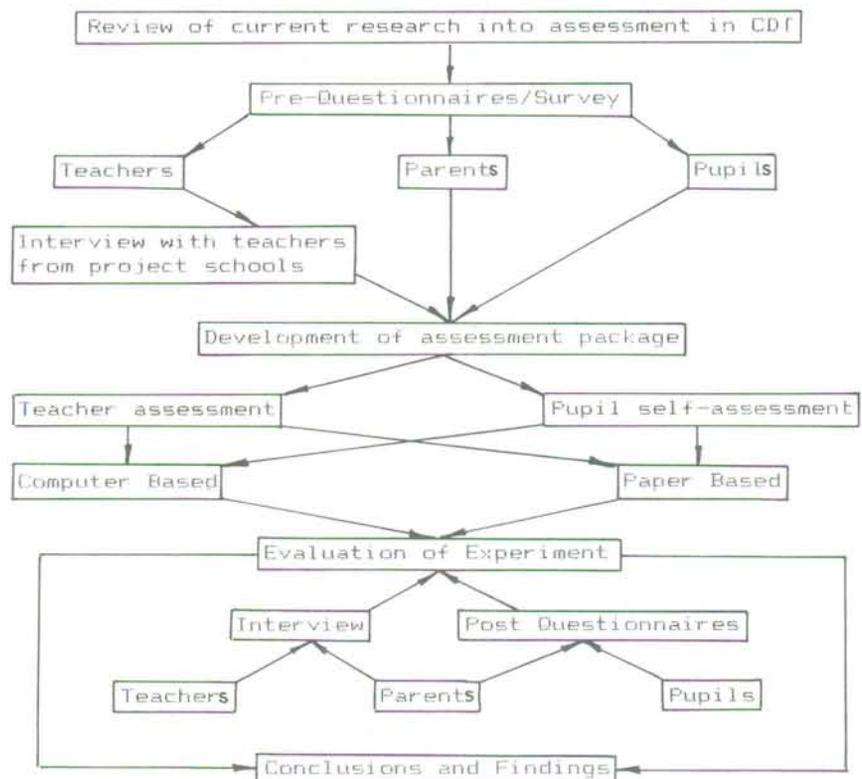
From a practical point of view it is obvious that such factors will generate extra work for the practising teacher if assessment is to be done 'correctly' (according to the aims expressed by Cowton). The essence of this means that teachers have to be educated or enlightened to the benefits that assessment has for them. This may be in terms of feedback for teaching methodology, informing the pupil of specific areas that are central to the philosophy of CDT and/or provide a platform from which the subject can be promoted to parents, pupils, industry and other teaching staff (The Design Council, 1979). It has to become rather than an 'add-on' to the course, central to the learning process, in terms of motivation for staff and pupils.

Fox (1979), suggests that many parents lose interest in their child's education in the transition from primary to secondary through a variety of reasons, but he argued that contacts between the secondary school and parents are crucial in dealing with the maturational development of young adolescents. Musgrove and Taylor (1979) support this view showing through their research that close and regular liaison between parents and teachers reduced conflict of views and Sharrock (1970), felt that many parents want to be actively involved in their child's education. During the initial contacts with the schools involved, it was agreed in discussion with the teachers, that whatever was developed would go towards nurturing the interaction between teacher and pupil and also developing the contact between school and the home.

These views are supported by the returns of the questionnaire from parents where 95% of parents indicated that they would welcome regular information on their child's performance in school.

This was supported by 110 teachers of CDT, where only 18% felt that parents should not be given any extra information other than that given on the school report system. However, perhaps a much more significant and worrying feature was that only 3% of the responding teachers felt that the parents understood CDT as taught in their school. In response to this, the discussions with the project schools

were directed towards developing criteria statements that promoted, informed and assessed pupils in CDT, rather than developing bi-polar scales (Johnstone et al) or grade descriptions ranging from excellent to poor (Finney and Fowler 1986).

From initial teacher interviews it was quickly obvious that the needs of each of the project schools would be unique, and the same criteria headings and statements would not suit the five schools involved. As the statements had to be developed and operated by the CDT department the methodology to obtain the criteria from the teaching staff in the schools for the assessment model was an area of concern. The adaptation of an objectives game simulation was thought to be perhaps a novel and interesting way in which to elicit a quick and well discussed response from departments. The factors for consideration were derived initially from the piloting of the teacher questionnaire.

The teachers were asked to give weighting to the factors (as shown in Table 1) that they felt should be assessed as part of a foundation course in CDT. These results were not given to the project schools as it could have sensitized their choices of criteria. However, they may well indicate guidance for teachers of CDT who wish to develop criteria related statements for assessment of their students, providing a consensus view as to the most important qualities to assess.

The weighting of the factors is interesting, showing that apart from attitude, application and safety all factors with $\bar{x} > =4.96$ are all part of the design process.

The criteria listed above, were put onto card strips to be manipulated by the various departments onto a large 'game board' with the headings essential, desirable and peripheral, which could then be used as a focusing device to arrive at a departmental decision. The freedom from a tight

Table 1	Teacher responses to Assessment Criteria for use in CDT Foundation courses							
	Essential					Def.Not		
	6 X	5 X	4 X	3 X	2 X	1 X	$\bar{x}$	(N)
APPLICATION	62.39	26.60	8.26	0.92	1.83	0.00	5.47	109.00
ATTITUDE	53.21	23.85	13.76	6.42	1.83	0.92	5.17	109.00
BEHAVIOUR	37.61	19.27	26.61	6.42	6.42	3.67	4.64	109.00
COMMUNICATION GRAPHICAL	76.36	17.27	6.36	0.00	0.00	0.00	5.70	110.00
COMMUNICATION VERBAL	26.36	26.36	30.91	14.55	0.91	0.91	4.60	110.00
CONSTRUCTIONAL SKILLS	39.09	38.18	18.18	4.55	0.00	0.00	5.12	110.00
COSTING A PROJECT	9.09	15.45	30.00	26.36	15.45	3.64	3.65	110.00
DEVELOPING IDEAS	60.91	24.55	14.55	0.00	0.00	0.00	5.46	110.00
EVALUATING	58.18	26.36	14.55	0.91	0.00	0.00	5.42	110.00
HOMEWORK	14.55	17.27	36.36	20.91	4.55	6.36	3.97	110.00
IDENTIFICATION OF PROBLEM	48.18	26.36	20.00	4.55	0.91	0.00	5.16	110.00
KNOWLEDGE OF MATERIALS	26.36	29.09	33.64	9.09	1.82	0.00	4.69	110.00
KNOWLEDGE OF TOOLS	26.61	23.85	36.70	9.17	3.67	0.00	4.61	109.00
LANGUAGE DEVELOPMENT	4.59	15.60	37.61	26.61	10.09	5.50	3.61	109.00
MATHEMATICAL DEVELOPMENT	4.59	19.27	32.11	27.52	10.09	6.42	3.61	109.00
MODELLING	19.09	31.82	37.27	9.09	1.82	0.91	4.55	110.00
PROBLEM SOLVING	66.67	28.70	3.70	0.93	0.00	0.00	5.61	108.00
QUALITY OF FINISHED PRODUCT	39.09	37.27	21.82	1.82	0.00	0.00	5.14	110.00
RESEARCH SKILLS	36.70	31.19	24.77	6.42	0.92	0.00	4.96	109.00
SAFETY AWARENESS	62.73	16.36	14.55	6.36	0.00	0.00	5.35	110.00
SOCIAL DEVELOPMENT	7.34	26.61	27.52	19.27	15.60	3.67	3.80	109.00
TECHNOLOGICAL CAPABILITY	27.52	41.28	21.10	9.17	0.00	0.92	4.84	109.00
WORKING WITH OTHERS	23.15	33.33	23.15	13.89	4.63	1.85	4.51	108.00

interview schedule or a long set of instructions meant that departments could discuss freely any relevant issues to assessment that they felt were peculiar to their particular situation.

After the department had selected their main criteria for assessment a set of statements had to be worked out under each heading. This development of statements for five/six criteria presented considerable problems initially but quickly led to the development of lists of statements being generated for each of the headings derived from the teacher questionnaire, and these were then given to the remaining departments in the project, that could then use as a basis for discussion to use, modify or replace with statements of their own. (These have since been developed by the author through the East Midland Record of Achievement project as part of an INSET resource pack for use across the curriculum — EMRAP, 1987).

Four of the five project schools adopted a similar format with six major headings and five comments under each heading, with schools 'A' deciding on five major headings and four comments for each. These had been arrived at through discussion within the department and in the light of the general philosophy of the individual school. (The number of up to six major headings with five comments under each had been suggested as a maximum from pilot work done at Kirkby Centre school before the research project began. However, the schools were told that this number was not prescriptive and could be exceeded if they wished).

The model presented and developed in each of the five schools is regarded as being developmental rather than prescriptive. School 'B' changed one of the criteria headings and developed statements immediately after the first issue of the assessment sheets. This is reflected in the other four schools who although have kept the same assessment criteria scheme for the year of the project, are in the process of reviewing the headings and statements initially chosen.

From the returned list of headings and comments the various computer and paper based documents were produced for the schools, so that they could then evaluate and select the method most suitable for their situation.

In all of the five project schools, the teacher assessment adopted has been computer based. What advantages attracted the teachers to decide for the computer generated package rather than relying on the traditional paper based system?

Perhaps there was a 'novelty factor' involved in using new equipment to solve an old problem. But to be of any value in improving practice, new techniques and methodology must save time or give significant benefits over traditional systems. So what made the computer based assessment scheme so attractive for the schools to be willing to trial on the pupils in their school? The most obvious advantage is that of consistent quality of printout without grammatical errors, spelling mistakes or the use of different coloured ink which often pervade traditional school reports. There is also the problem with paper based systems of keeping copies of the assessment that has been made. This is often overcome by the use of self-carbonising paper but this can be expensive in production especially where reports are regarded as being developmental and changes are often very costly in terms of new printing having to be financed. In terms of the computer based assessment, changes can be made very easily and the information readily to hand for the individual teacher or the head of department. A printout of the information on a pupil can be made at any time and copies of the assessment made does not have to be filed into a cabinet as using the computer means that it can be viewed at any time and a hard copy made if and when necessary (Figure 2).

This study in proposing a model based upon criteria statements has made five individual CDT departments address the problem of assessment in terms of their teaching objectives and individual philosophies. They may all reject the system in the future for one that is more closely aligned to what they will be told to assess in their pupils (DES ?), and perhaps present the information in different formats. By developing a departmental system of assessment, they will be in an advantageous position of being to be able to be critical and appreciative of other types of assessment packages that they may meet, be they paper or computer based. In developing a system unique to their own department, meeting the needs of both pupils and parents, the staff involved in the project felt more committed to working what they had developed rather than having to operate a system imposed from 'outside'.

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