

CDT for Pupils with Special Needs

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Starting Points: A Teacher's View

Norma Stevens

Children in mainstream schools have the advantage that Craft Design & Technology activities are constantly expanding, but what can the subject offer children with special educational needs?

Children who are assessed as having special needs are generally lacking in self-esteem. Failure has been experienced in most areas of their lives, eg. with peers, adults, school achievements. Before we can have any success with these children we must begin to build up their self-awareness and teach them how they can adjust positively into society and into a relationship with themselves and others. CDT gives us a positive medium to put this aim into action. Through action-based learning, activities can be structured so that the child is working with knowledge he has experienced already and can therefore build upon. It is important that the pupil sees he is no longer in competition with others but that all work can progress at the child's pace. With success there develops a sense of achievement, self-worth and a boost in confidence. Action-based learning provides a relaxed atmosphere in which the child can interact with others by talking, sharing tools and sharing the environment in which they work and move. The material provides its own discipline and its restrictions and the pupil has to learn self-control and self-discipline in order to work with the materials. Within special needs, teaching two pupils together can spell disaster, and the development of awareness of the environment through CDT can develop understanding and tolerance of others through helping each other on a project, and finding the correct materials for the project.

The Concept Base CDT Working Party formed in the Manchester LEA by Tony Rogers, District Inspector, was my starting point for finding a relevant learning/teaching experience for pupils with special needs. Often the subject-based curriculum is centred round the teacher's interests and experience. It was felt by the members of the Working Party that the human needs and motivations which make us take action should be interpreted by the pupils to meet their own interests and

involvements within their surrounding environment.

Motivation is far too often confused with compliance and learning confused with evidence of the ability to find out what the teacher wants. In order to develop the pupil's self-image, it is important for the pupil to be seen to achieve. However, the path of achievement has to be important to, and necessary in the eyes of the doer. The visual and practical experiences are powerful avenues to explore the self-image because they enable the pupil to observe and become constructively critical. It is important that we develop courses which will help the pupils to become adaptable and self-sufficient so they can make their own environment acceptable in a rapidly changing society.

The Concept Base Working Party explored the following areas:

1. Images of Self
2. Reaching out to People
3. Awareness of Time and Place
4. Motives for Action
5. The Human Capacity to Take Action
6. Ways of Taking Action

Thus we have:

- Reasons for taking action.
- Ways of acting.
- Outcomes derived from action (expected or unexpected).
- The advantages and disadvantages of making.
- Knowing when to act.
- Knowing when to do nothing.
- Consequence of failure.
- Consequence of apathy and inertia.

Through this the pupils can discover that action is of central and peripheral importance in society.

As there are six 'concept bases', each can be used for half a term. The first year of the curriculum, the concept base is taken at the basic level and as the years progress, the children can be taken to a more advanced level as their knowledge and skills increase.

These concepts are seen as the scaffolding that instigates and supports all making and doing. Each concept should be thought of as a starting point and also be considered relative to each other. Because these concepts develop an explosion of ideas, we no longer have to worry about what to do, but can instead become selective. Thus:

Concept Base

Motives for Action

- * owning — defensible space
- * locking
- * burglar alarms
- * security forces
- * fences/walls, boundaries
- * customs/excise
- * castles
- * the British Square
- * personalised space
- * *Personalised Space*
- * painting and decorating
- * individualising gardens
- * public and private space
- * NO GO areas
- * totems

This example develops a wide area in which the children can provide stimulus for themselves. They are no longer making a key ring, a fish slice, a locking device or a totem as an isolated activity, but developing an awareness of belonging to a culture.

These ideas could go on for ever and what we are trying to achieve is a relevant teaching experience for pupils that has a practical outcome bearing in mind the needs of pupil — not the teacher.

The proof of any success of curriculum innovation is to take the ideas into school and try them with the pupils. This was done with the 'Images of Self' concept base. Breaking this down into workable areas we have:

Images of Self

- * Self and the Environment
- * Self and Society
- * Change and Control

Change and Control was the area isolated for experiment in four types of school:

- Moderate Learning Difficulties (age 13-19)
- Social and Emotional Difficulties (age 3-13)
- An Inner City Primary School
- An Advantaged Primary School

Because of the nature of the schools it was important to develop a scheme of work to be used across the curriculum. The title 'CHANGE AND CONTROL' was used for a brain-storming session with each class to stimulate thinking within this area and the level of awareness of the pupils. The areas then isolated for further study were:



THE ENVIRONMENT — An Adventure Playground.
CONSUMER EDUCATION — symbols — hairstyles — dress — glasses — make-up — bread etc.
MECHANISMS — gears — cogs — pulleys — levers — musical instruments.
VEHICLES — control — use — need — want.

These took into consideration the children's interests and the interests and expertise of the teachers.

THE STIMULUS for the children were visits to:

An adventure playground (local)
 The Science Museum
 Exhibition of Musical Instruments held at The Corner House, Manchester
 Magazines
 Bicycles — to be taken to pieces
 Adding Machines — to be taken to pieces

The developing curriculum for the area of **VEHICLE CONTROL** was as follows:

VEHICLE CONTROL

1. Visit to the Museum of Science and Industry:
 - Looking at vintage cars
 - Observation of drawing a wheel
 - Observation of Traffic over a period of time to and from Manchester
 - Visit to the Motorway
2. Experiments with toy cars to develop concepts which will allow the design of a moving vehicle.
 - a) Energy stored in a clockwork car and the distance it travels.
 - b) How does the shape of the vehicle alter the distance it will travel?
 - c) Investigation of the relationship between the mass/weight of a model car and the time taken to travel down a fixed slope. (SCIENCE)
3. Draw graphs, measuring results, linear measure, stop watch, averages. (MATHS)
4. Written work to record experiments and results. (ENGLISH)

5. Model of a car powered with an elastic band.
 Model of a boat powered with an elastic band or wind (vacuum cleaner).
 Carboard model of the motorway. (CDT)
6. Properties of a circle — diameter, radius, centre, circumference. (MATHS)
7. A model using gears showing transference of energy from a vertical to a horizontal plane.
 War machines — a simple mangonel using an elastic band for power.
 Drawing designs, experiments — fire the mangonel using various missiles, plasticine (different weights) — how far and how high?
 Catapults. (CDT)
8. A firing chart. (MATHS)
9. The Renaissance.
 Leonardo de Vinci — war machines, drawings, dimensions, materials to make models, make working models. (HISTORY)

The pupils in the Special Schools had previously done very little practical work and the care taken to control a soldering iron and measure the pieces of wood to build a structure for a playground model were all indications of the potential of practical exploratory work with pupils with special needs. The wide-eyed exclamation from the teacher who kept his class (before this experiment) very much under control, 'But that child cannot count or measure' (he built the best playground model in class) and 'That child is very aggressive' (he was using the soldering iron with care and precision), made the weeks rushing round the schools like a travelling road-show worthwhile.

When working with children with special needs, it is important to use the expertise of colleagues: work in two's or three's using the concept bases as starting points for brainstorming ideas. It is surprising how the ideas flow when a group works together, and as the project ideas grow, they can be fitted into context instead of used in isolation, and can be turned into a realistic experience for the child.

ASSESSING AND RECORDING ACHIEVEMENTS: A Headteacher's View (Bill Montgomery)

CDT, although important, is nevertheless only one element of perhaps twenty or so which can be used as vehicles to assist in the educational development of our pupils.

However, these curriculum areas are not islands of study standing alone, only to be visited by our students at designated times of the week just to experience something different. Many concepts and skills and much knowledge pay no heed to the boundaries we often jealously build around our subjects and departments. The whole child meets every experience we offer and it is the whole child we must consider all of the time.

If we can accept, then, these basic principles when we consider the various aspects of our curriculum's development, it would seem advantageous to me if all of its segments could be contained in a single method of assessment and record-keeping.

We teach individual children, not classes, forms or year groups. How we organise our establishments must be secondary in our thinking to viewing each pupil as a unique individual with a pattern of particular needs. Indeed, the learning difficulties of the so-called special needs child makes this attitude not only desirable but, in my opinion, essential if we are to offer him or her an environment within which the maximum of educational potential can be achieved.

In our consideration of the assessing and recording of pupil progress, if we draw together the two threads of, firstly, a common approach throughout the total curriculum and, secondly, individualised learning and teaching programmes, and see them through the eyes of the CDT teacher working with special needs pupils, I believe we have a challenge of extensive and exciting, not to mention contentious, proportions.

The CDT specialist is as important to the school team as any other members of staff. Invariably, he or she brings talents envied by others. But these skills are far too often seen as just 'being good with the hands'. This view is so narrow as to be an insult. CDT concepts, knowledge and abilities should be taken across the

complete breadth of the curriculum. Any method of pupil assessment and record-keeping should make this not only possible, but desirable.

The approach developed by our staff at Roundwood Upper School is an attempt to embody this attitude. We believe it offers a workable model for assessing and recording each student's educational programme continuously in every subject area of his or her timetable. Our curriculum can be divided up into twenty-six fields of study and each has written down for it an 'Educational Development Profile'.

For the purposes of this statement, I will address only the CDT Profile, but it should be stressed that, at Roundwood, there is much cross-curricular activity and no one subject is allowed to stand alone.

The CDT specialists were asked to consider the concepts, knowledge and skills they felt should be included in their programmes for the one hundred and fifty thirteen to nineteen year old students ascertained as having moderate learning difficulties who make up our school population. The teachers were then asked to write down the chosen concepts, knowledge and skills in developmental order in relation to their perception of CDT. As you will appreciate, these two tasks were found to be contentious, prolonged and extremely difficult. They took months to complete satisfactory and involved much discussion, co-operation and compromise. Each developmental step within each section of the profile was then numbered and the numbers presented on a 'Brick Wall' to facilitate continuous assessment and recording of achievement. The contentiousness and compromise of the exercise is best illustrated by the fact that, at Roundwood, we have ended up with TWO profiles for CDT (See Appendix 1). One is given over to knowledge and skills, while the second concentrates on concepts. I understand there is much discussion nationally regarding the merits of both aspects. Looking at the situation from the Headteacher's point of view, I believe we at Roundwood need to have information on skills and concepts to give us a complete picture of the student's performance.

The day-to-day operation of the profile is uncomplicated, yet it gives us a

comprehensive view of each student's position at any time throughout the year. When the teacher is satisfied that the student has understood a concept, gained some piece of knowledge or attained as skill, the appropriate numbered 'brick' is coloured in. Gradually a pattern of development can be seen both by the teacher and, more importantly, by the student. A system of colour coding illustrates the rate of progress as the student passes from year to year.

The subject profile is used as an aid by the teacher with respect to classroom organisation and lesson content. It does not, however, dictate the teacher's methodology.

The students have a period of initial assessment to establish the levels of individual development already gained prior to them being introduced to our CDT programmes. From these patterns coloured in on the 'brick wall', the teacher is able to plan each student's goals for the future. (At Roundwood, these are set for each half term). Seldom, if ever, are two students at precisely the same stage of development in CDT, or indeed in any other area of the curriculum. It therefore follows that each goal plan will be different and consequently individual in their composition. It is in this way that we can draw learning and teaching programmes for all of our students directly from the Educational Development Profile.

With regard to the specific content of the attached CDT Profile, as a non-specialist I am in no position to judge the quality or developmental order of the learning steps. However, it is important to me that all of them are positive and attainable. The teacher must always be in a position to identify the profile steps encompassed by the tasks he or she is requiring the student to take part in, and be able to offer evidence of the learning which has taken place.

Appendix 1: Examples from Roundwoods Assessment Profile

The 'Brick Wall' divides into:

- (1) *Concepts* (Design, Communication, Personal, Safety)
- (2) *Skills* (Tool recognition, usage, workshop and material process)

For example, the Design Section is shown below:

		309	310
305	306	307	308
301	302	303	304
297	298	299	300
293	294	295	296
290	291	29(a)	292
286	287	288	289
282	283	284	285
278	279	280	281
274(a)	275	276	277
271	272	273	274
267	268	269	270

DESIGN

Each brick relates to a specific assessment; some examples, from Design, are shown below.

DESIGN SKILLS — COLOUR (continued)

The student can:

	Date	Signature
288. Relate colours to emotions.	_____	_____
289. Choose colours in 2's to blend own choice.	_____	_____
290. Choose colours in 3's to blend own choice.	_____	_____
291. Understands the meaning of Harmony — understands colour wheel.	_____	_____
291(a). Understands contrast — understands — colours opposite on a colour wheel.	_____	_____

PROPORTION

The student understands:

292. Different parts of an object are related by size.	_____	_____
293. The eye can play tricks.	_____	_____
294. The answers are not right or wrong but need decision.	_____	_____

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