Special Needs or Sacred Cows

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Of all the subjects within the National Curriculum, Technology provides the best chance for ALL students with (and without) special educational needs to achieve alongside their peers. Its wide ranging contexts present students with the opportunity to develop an array of skills and knowledge that no other single subject can offer. Yet this very breadth also presents the greatest challenge to students with learning difficulties and teachers and educationists alike when it comes to special educational needs.

The interim documents for technology promised a lot, but as usual the reality was much less innovative and much more predictable. The statements of attainment are written for middling ability students of progressing age. However, it must be said that on this count Technology is better than the other subjects so far delivered under the National Curriculum put together.

What is happening now is that those adept in special needs are rooting around to find ways in which their students can access the National Curriculum as it stands. It would have made so much more sense to have had serious input from these specialists in the early stages. Yes we know there were consultations, but we all know what a cosmetic exercise that was!! We have seen such political maneourvrings too many times before.

If only...if only those venerable educationists and advisory bodies could have shown a little more commitment to the challenges special educational needs presents, then design and technology would have been, in reality, a radically new subject, a true example to the rest, not just a composite of old specialisms, glued together, in the hope that the glue will stick!

Educationally, design has got to be the soundest way for all to learn. The inability, and often unwillingness of students with special needs to learn rote fashion does not mean that they are THICK. Some learn best in the environment that is the street, by experience, by doing. There are no books,
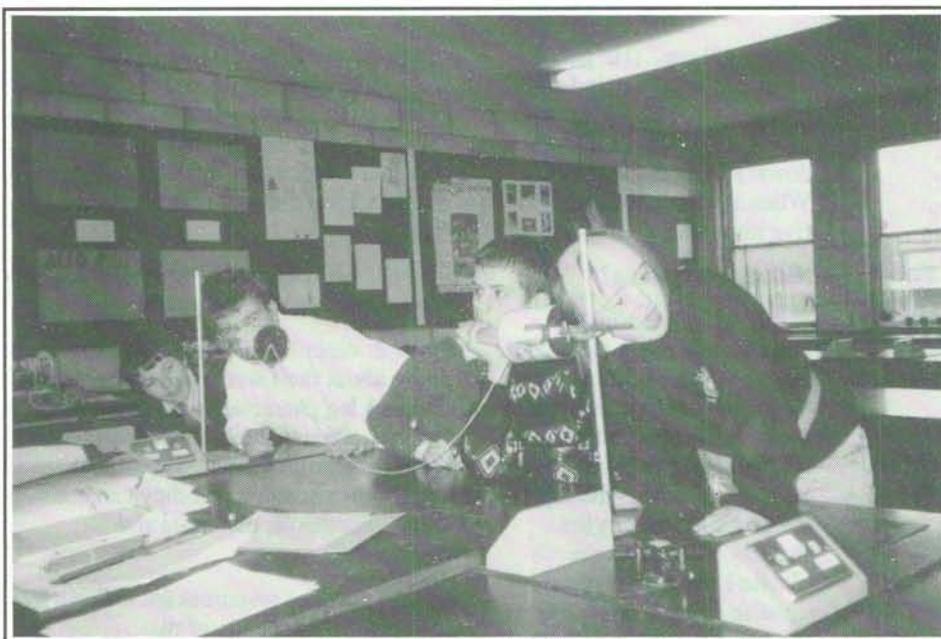
no need for reading or writing. Doing, taking part, experienced by getting your hands dirty, exploring, is their medium of education.

Lets take another aspect of special needs, those with severe learning difficulties. Some still call them, (mentally) handicapped, but they are? Our National Curriculum now has exemption clauses. A cop out if ever there was one! Students such as these are quickly assessed as 'not being able' to achieve within the National Curriculum framework. The phrase 'gain experience of' is the epitaph on the graves which contain the unstimulated minds of students with severe learning difficulties all over the world.

While it is true that 'gaining experience of' is a valuable and constructive exercise it must not be a barrier to further possible development. Why not include such a parameter within the National Curriculum statements of attainment. This would serve to include more students with special educational needs than can hope to be accommodated at present?

If it is assumed that they cannot achieve, then they will not achieve. But it is not the fault of the students that they fail, it is

the fault of educationists and policymakers alike who lack the backbone to find a way for these students to achieve. As we research and develop it is so easy to set narrow criteria. The 'normal ones', the '9 to 13 age range' or the '14 to 16 age range'. Everything is guided (and the National Curriculum for Technology is no exception) from the top down. Lip service is paid to special needs but fear of the unknown is a barrier that few seek to cross.

Our research to date has blown a hole in the Science National Curriculum, giving students with severe learning difficulties access to statements of attainment by providing a framework more suited to their needs. The style is very much education by design, incorporating a conceptual development programme so that goals are within their understanding as they progress. This has served to reduce the gap between mainstream and students with learning difficulties.

The major problem will occur with the SATs. These students can barely read and write. We have assessed their understanding through drawing, colouring, conversation etc. not through

traditional methods such as reading and writing. Will SEAC be as enlightened?

As far as Design and Technology goes, the problems of students achieving are different than those in Science. In Science each attainment target can be taken separately, and a conceptual path worked out. Not so in the case of design and technology. The process that is the four statements of attainment means that to achieve they have to be taken together. This in itself is not an insurmountable problem but if the programmes of study are added the problem is magnified considerably. The structure of the programmes of study are not conducive to easy access, nor is the sheer weight and wide variety of knowledge expected to be absorbed by the students. This makes it very difficult for students with learning difficulties.

It is not enough just to dilute secondary based experiences in Design and Technology and hope that they will FIT the needs of students with severe learning difficulties. Indeed the reverse is probably a better prospect. To begin with a strategy for students with learning difficulties then build and develop a programme for other students. This would provide a developmental programme of study that could be accessed easily by all, as part of this the statements in the programmes of study and the statements of attainment would need to be brief, dealing with only one concept, skill at a time. The leap in demand from one statement to the next should be only small so that progress can be maintained. Here surely is the way of a National Curriculum.

The key to access into the statements of attainment as they stand with respect to Design and Technology can only be through teacher input. With help and guidance and a scaling down of such input from heavy involvement to little/no input, students with (and without) learning difficulties will achieve. It would have been more helpful if the prefixes for each statement were;

- the pupils should be able to...'with help' or 'independently'

- the 'with help' can be further divided into...

- 'by instruction'...'by promoting'...'by advising'

Such a programme allows much greater access. At present the open ended nature of the statements prevents achievements for most students with learning difficulties.

The Case Studies in my text, National Curriculum, Design/Technology for key stages 1,2, and 3 were described by Mike Schilling in his review in DATA as too prescriptive. While I agree that open ended activity has got to be the aim, it is not always the best starting point, for teachers unfamiliar with Design and Technology and for particularly students who cannot cope with a learning environment that is not highly structured as is the case with many students who have learning difficulties.

Yet the benefits for students with learning difficulties within the subject of Design and Technology is not in question. If only they are given a realistic chance of achieving within it. Our research to date, has shown that students with severe learning difficulties can, and do, design. They have ideas, they can make, they can evaluate. The activity outlined below shows how these students can achieve to National Curriculum targets.

To set the scene, the students had been working with SOUND, using the Science AT 14 as the backdrop. We had devised a conceptual path through the topic sound as defined in the statements of attainment. As a part of that work, the students had made and worked with model telephones on at least two previous occasions. I set a model telephone up, with the string slack. The class sat round.

C.L. 'how can I make it work better?'
David 'move that one' he pointed to one of the cans.
C.L. 'go and show us David.'
David came to the front and pulled the stand holding one of the cans until the string was tight.
C.L. 'why have you done that?'
David 'to make it work better.'
C.L. 'why will it work better?'
James 'the string's tighter' (his limited language level makes this statement quite profound).
David '..get better vibrations'

C.L. 'how else might we change the telephone to make it work better?'
No answer.
C.L. 'how might we change the tins?'
Stephen 'plastic'
C.L. 'plastic what?'
Stephen 'plastic cups.' (they had made them from cups before)
C.L. 'what could we use instead of string?'
James 'metal.'
David 'wire' (experience of telephone wires perhaps?)
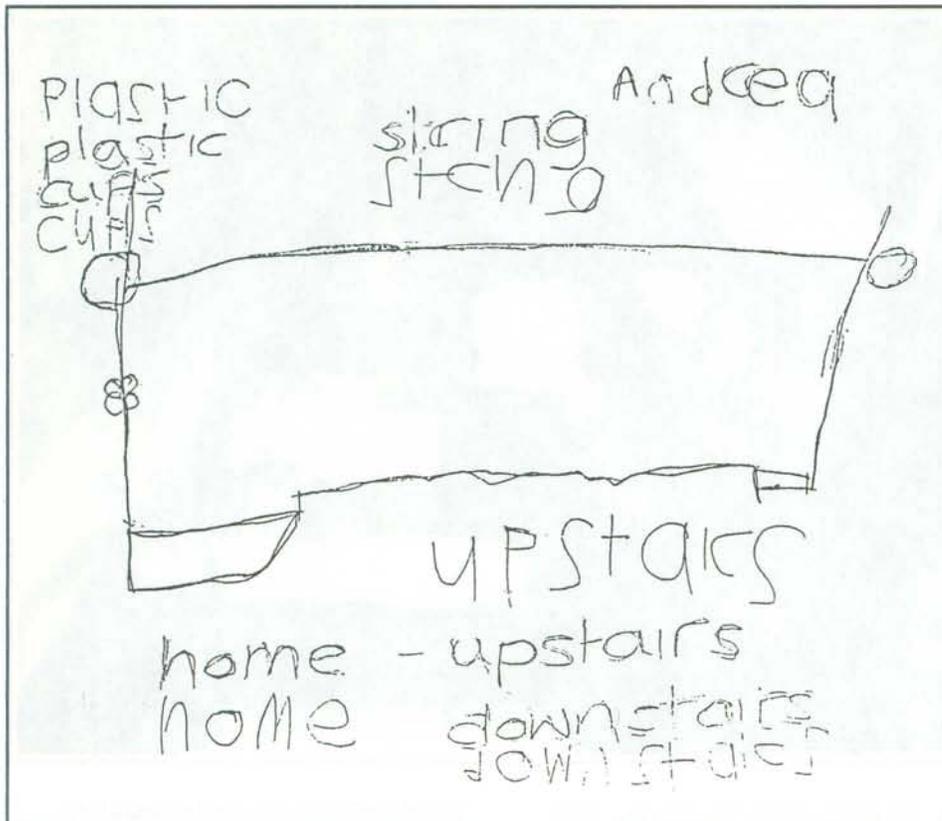
C.L. 'why use metal?'
James 'vibrates better'.

C.L. 'where at school?'
Stephen 'to send messages.'
David 'in the office.'
James 'to Mrs Harrison.' (school secretary).

C.L. 'where else might you send messages in school?'
Darren 'to class 4'
J.R. 'who is in class 4?'
Darren 'my friend..Michael'

The students were then asked where at home they might use such a telephone
Elaine 'across the wall' (meaning the cable should go across the wall)
Lee 'talk to my brother.'
Elaine 'talk to my mum..in the kitchen.'
Andrea 'in my bedroom downstairs to bring a drink up!'

They were then asked to draw a design of where they were going to use the telephone and what it would be made from. They told the teacher what materials they wanted to use, we wrote their responses on their diagrams.

The equipment was set out for them to choose from. There was various thicknesses of string and different types of wire. There were some tin cans with holes pre drilled and plastic and polystyrene cups without holes.

David who was perhaps the most able within the group chose wire first but after trying it out went back to using string.
C.L. 'why have you changed it?'
David 'it works better'. (with string)

Once they had made their telephones we carried out a role play of them in their chosen environment talking to the person of their choice. As each student stepped up they had to tell the rest of the group;

• what each part was made from,

• where it was going to be used,

• how well it worked (after they had tried it out)

The significant breakthrough here is in terms of AT1. Within limitations, the students had identified opportunities for the use of their telephone and needs in terms of equipment they required, David had also shown the ability to modify his design in the light of knowledge and experience. (David although designated as having SLD, is also very streetwise. A confident and independent student)

For some, where wire was chosen demonstrated a comprehension of the properties of metal as being a good carrier of sound. They had previously carried out Science based activities on sound travelling through different mediums. The concept of vibration was fundamental to all their Science work on sound.

So have these students with severe learning difficulties identified needs and opportunities, designed, made and evaluated their work? You must make your judgement. Have they achieved to National Curriculum targets? They have achieved without a doubt! with guidance, in a semi-open ended situation. Design and Technology capability must be able to allow students such as these to achieve, or else exemption will mean, non participation and that would be a tragedy for design.

This particular research project utilises design in yet another way, to facilitate Functional Integration between these students with severe learning difficulties and their peers from mainstream. The model used is a simple one (on paper!!). The usual assumption is that integration involves two different sets of students studying the same subject at the same time. The use of design makes the study of two subjects by two different groups at the same time possible.

• Students from mainstream are given a 'loose' design brief relating to the Science topic being covered by the SLD students.
e.g. 'design a lesson to do with sound'

• The two parties meet at the special school in an informal setting. The purpose of this is to choose partners, to form relationships and for the mainstream students to make an assessment of their partner's abilities. e.g. can they read? can they write? can they count? if so to what number?

• the mainstream students are then given a little time to research out the subject matter and design a lesson. constraints are added in order to ensure that the students build in key components. These are;

• the lesson must involve their partner in practical activity.

• the lesson must involve their partner being active.

• the lesson must involve their partner recording.

Jade.

tin wire
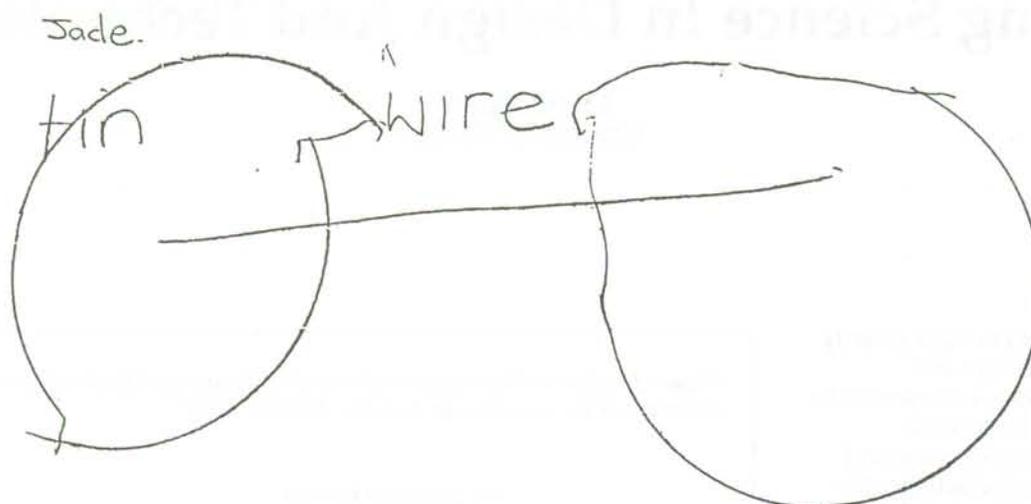
school - Kitchen
classroems

The students are also asked to give a written evaluation once the lesson has taken place. This evaluation asks them to;

a. comment on the successes/failures etc of their design and how it might be modified in the future.

b. comment on their feelings about working with such students.

The latter one has thrown up many enlightening quotes and statements, all of which come from the heart.

The model for facilitating integration is proving very successful. In political terms with respect to Design and Technology it is unfortunate that Science is the focal point. the same model is about to be trialled using other subject specialisms as the focal point.

By utilising design in this way functional integration has taken place with few, if any compromises. The mainstream students are using subject knowledge in a design environment. The academic rigour of their design is at least kept intact and more often than not is extended, this is also true of the subject that provides the scenario. As teachers we all know that to teach a subject effectively we have to know what we are talking about!

The students with learning difficulties are held in an environment that has been designed to suit their needs. The work is

appropriate and stimulating. The great bonus is the interaction of these peer groups. Attitudes, fears, concerns, preconceived ideas and ignorance are swept away in a tide of great motivation and fun.

The sad fact is that is that the students from mainstream should be able to score within the profile component Design and Technology capability. This was the initial aim of using design. However, the narrow focus of this P.C. means that this does not fall into the PoS. It is not CDT or Home Economics or Business Studies or Art and Design. How many other projects that can be linked to the statements of attainment for Design and Technology will be tossed aside because they do not fit the slices of pie cut to suit the few. In the end there is only one loser... Design and Technology.

A video of the project is available, price £20 from Tony Tawil, TVEI Unit, Heywood Community School, Sutherland Road, Heywood, Rochdale.