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The art of technology: a case study approach to linking Art, Design and Technology at Key Stage 4

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Abstract

The Wigan Technology by Design Project is based on a partnership between schools, Wigan TVEI and the Design Dimension Educational Trust. It aims to use a design approach to technology education, develop flexible learning approaches to design and technology in Key Stage 4, build cross-curricular links, address issues of equal opportunity in the technology curriculum and develop the management skills of technology teachers.

As part of this project, the Departments of Art and Technology in St. Mary's R.C. High School used a design approach to bring together the work of students following a GCSE Design and Communication course and GCSE Art. This paper describes their work and its evaluation, paying attention to management and staff development and their resolution.

Rationale

Design Education is an essential element of the National Curriculum in Technology. As yet, however, schools have received precious little practical guidance on how Design Education can be enhanced and managed within the curriculum. The Wigan Technology by Design project was set up to deal with this situation. It is based on a partnership between five project High Schools, Wigan TVEI and the Design Dimension Educational Trust. The aim was a simple one and that was to use a design approach to technology education. In the process the project would:

- employ flexible learning techniques;
- build cross curricular links;
- address equal opportunity in the technology curriculum;
- develop the management skills of technology teachers.

The decision was taken to focus on activities at Key Stage 4.

One of the schools involved, St. Mary's High School, Astley, decided to work through the Departments of Art and Technology and to bring together the work of students following GCSE Art and GCSE Design and Communication courses. The staff aimed to provide students with a design experience which offered:

- a motivating and real problem to solve related to the school environment;
- the possibility of realising the design proposals through "selling" the ideas to a client group - the school's governing body;
- an opportunity to engage in design

processes, raising students' understanding of how professional designers work;

elements of cross-curricular work between Art and Technology within the GCSE requirements of each area.

The initial design brief commissioned the students to re-design the entrance area of the lower school. In doing this they would need to create a welcoming environment that emphasised the ethos of the school. They would also need to create a functional display area but at the same time take into account other uses of the area.

Prior to the commencement of the project the staff of St. Mary's outlined their aspirations for their pupils in terms of objectives and attitudes. They hoped that by the end of the project pupils would be **better able to:-**

- research information related to a particular design task;
- identify needs and opportunities for improving the Lower School Entrance area;
- generate a design proposal using appropriate methods of presentation, i.e. drawing, three-dimensional models, painting, textiles, ceramics, computer graphics, written information;
- discuss and record opinions, ideas and feelings related to the design process and their design task;
- consider the ways, methods and strategies employed by others and apply these to their own working practice;
- estimate and cost the resources and time likely to be needed to complete the task;
- organise and control time, space and

materials to achieve a desired outcome;
work within a variety of group situations;
evaluate their work and the work of others.
Attitudes they wished to encourage in pupils included:
curiosity in processes related to researching,
making and presenting;
co-operation and tolerance while working
with others;
self-discipline in the organisation of time
and working procedures;
commitment, perseverance and patience in
producing the required work;
willingness to contribute to group and team
sessions.

Project outline

The first phase of the project started in January 1992 with a formal presentation of the design brief by Mr. Alan Bell, the Headteacher, to all pupils in an assembly. This marked the beginning of a phase that was concerned with identifying and investigating the precise nature of the design brief. It also included consideration of the project itself, the sequence of the content and how these might be included within the normal timetabled lessons for Design Communication and Art and Design.

Towards mid January the pupils began to carry out the research phase of the project. A critical studies approach using the work of Charles Rennie Mackintosh was a vital part of this phase. Students visited the area to be re-designed and recorded their responses as notes and sketch drawings. They were also shown ways to discuss the brief in groups and ways of organising a design task. Slide and video presentations were used as teaching and learning aids where appropriate. Pupils made notes on how the design process had been used by others and discussed which of the issues raised were important to their own approach. At this point two professionals in the field of design made presentations to the pupils in order to underline the links between the Managing Director of a Construction Company which designs and builds commercial and domestic properties in the North West of England, the other was an Art Specialist with knowledge and expertise in the area of commissioning and developing public art works.

Considerable time was spent ensuring that pupils used the research phase to get a thorough grasp of design principles and the constraints put on the design and make process 4. By mid February pupils were beginning to generate their own designs. The Art and Design classes used first hand stimuli based on observation work from natural forms. Their attention was drawn to line, shape, colour and

pattern in the forms that they were studying and interpretations of these using stylistic approaches drawn from the work of Mackintosh. These pupils recorded their information in their sketch books. The Design Communication classes investigated a range of existing interior designs using photographs and ground plans. They also collected information from trade journals and catalogues about fixtures and fittings. This information was incorporated into their design folders. Both groups were encouraged to record opinions, feelings, ideas and developments. Individual group discussions were used to help pupils to co-ordinate information. Informal exchanges of information between Art and Design Communication groups were organised where appropriate. Towards the end of this phase the "Design Bus" - Design Dimension's mobile conference/education centre - visited the school giving an additional context for research and discussion.

The third phase, at the beginning of March, should have commenced with a formal Joint Review Session, organised as an exhibition of all the designs generated by both Art Design Communication pupils. However, by this stage there was not enough work to create an exhibition. The rigidity of the school time table made it difficult to reschedule this exhibition at a later date and it did not take place. In addition staff felt that the pupils needed additional time to work on their own designs rather than looking at each other's work.

The fourth phase of the project involved the students in detailing and developing their final proposal. During this section students selected their most appropriate ideas to display their line of thought. They prepared a final presentation which included initial ideas, developments from these and a 'product sample' of what the finished artwork or design would look like. At this point all students had satisfied all the criteria for the Art and Design and Design Communication GCSEs.

Toward the end of the project, each class discussed the work they had all produced. Staff helped students to complete their Records of Achievement. This was the start of the final phase of the project concerned with evaluation. Using a set of evaluation criteria defined by a group of pupils chosen to represent each class and each of the two curriculum areas involved in the project - the selecting panel - a number of proposals were presented in the Art department exhibition area. The panel, again using the same criteria that had been used to select the representative work on display, chose a number of design proposals and art work designs to be presented to the Headteacher and Governors. Five

members of the selecting panel presented this final set of work at the Buildings Committee meeting. The presentation was done as if the students were members of a design company presenting proposals to a client group.

Staff Development, Evaluation and Outcomes of the Project

Running a project of this nature involved the staff in an on-going process of in-service training and planning. Two staff received initial in-service training from the Design Dimension team, part of which was delivered over a residential weekend. The emphasis for the in-service was placed on the promotion of quality, innovation, achievement and excellence in education through a design approach. An example was given of the processes used by the Wolf Olins Design Team during the development of the corporate image for Kuwait Petroleum International 5. It was decided at this point that as far as possible students in St. Mary's would employ these same processes. The planning and philosophy developed during this in-service was disseminated to other staff by the 'trained' members of the department. The development of the project sequence and its relationship with National Curriculum attainment targets and programmes of study was an activity which involved all staff concerned with the project. Group meetings to disseminate information and discuss the development of the project were held regularly. Early meetings were attended by the Headteacher.

Outside support included the involvement of TVEI staff in offering alternative perspectives, especially while forming project objectives. They continued to provide support throughout the project particularly in helping students to develop criteria for assessment.

The purpose behind staff development included:

- management of the project;
- cross curricular issues;
- National Curriculum management and implementation;
- closer links between Art and Technology;
- improvement of teaching skills;
- improved learning.

In order to assess whether or not these had been addressed adequately both staff and students were involved in a full-scale evaluation of the project. This is summarised below.

Resources and Organisation

The sequence of the project was well organised though some disappointments were experienced.

The Design Communication staff found this a difficult time to run the project. Pressures from GCSE course requirements and work in other areas had an adverse effect on the depth of preparation and presentation of the project. Art teachers felt that the visiting speakers could have appeared earlier in the project. Some issues had already been covered by subject teachers which created some confusion after the presentation. This resulted in initial ideas being dismissed by some students. It was felt by all staff that too much time was given to the early stages of the project. This meant that the time available for the production of the final piece was compressed and some theory work was missed out in the Design Communication course.

Cross Curricular Issues

The pressures of a timetable that separated the teaching time of Design Communication from that of Art led to difficulties with the exchange of information. This also meant that there was less cross-curricular experience for students than expected although at times cross influences were evident. The design process was a particularly strong influence in Design Communication and technology staff felt that there was a great deal to be gained from sharing experiences between the two departments.

Some pupils in Art found that their skills did not match their aspirations, which resulted in some tension in classroom practice. However, the most capable developed the positive aspects of the project to their advantage. Some staff felt that the project was too ambitious. Everyone felt that a more specific problem would be needed if the experience was to be repeated. Overall, however, the staff felt that it was good to offer a realistic problem to students and that they had improved their own teaching skills.

Outcome of the Project

"I think that it was good how we were left to make our own decisions and that the teachers didn't just tell us what to do."

"The Design Bus was good as we could see how designs worked in the end. Also every few weeks we had a look at each other's work to gain ideas and see how we were progressing. I think that the project was run very well. We heard people talk about the project from design firms and we could look around the Design Bus instead of just having a brief and just doing all the work ourselves with no outside help. I think that the people who weren't in the design groups should have been more closely connected with the work that the design communication groups did, as I didn't always feel that I knew what they were saying or what they had decided on."

"If I could change anything involved with the project, I think it would be my actual attitude towards the design dimension - I think that I should have spent more time on it."

In many respects the project did encourage a new open attitude within our pupils. The comments above to some extent reflect changes within the learning observed by staff. These were particularly evident in the discourse between pupils throughout the project. Pupils involved in the selection and presentation sessions at the end of the project impressed all involved.

All staff involved in the project identified opportunities for developing cross-curricular projects in the future. The examination requirements of GCSE in both subject areas offered problems which would have to be addressed. The building of skills is also an issue prior to the repeat of the project format. This would have particular implications for courses in the lower school and for the establishment of supported self-study strategies.

Before developing cross-curricular issues, block time table periods would be essential if an exchange of experiences within areas was to further promote the positive aspects of the projects. All involved felt that this type of exchange was important to the

growth and development of our students.

As an attempt to underline the importance of Design Education this collaborative effort seemed to be successful and a source of rich learning for all. It is not clear, however, how far this can be repeated given the current state of National Curriculum Technology, the demands made by SATs and the uncertainty in teachers about the next steps to take.

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