

Strategies for teaching coursework for 'A' level design

Howard Denton and Stephanie Edwards
Loughborough University of Technology

Introduction

Working with students taking Design at 'A' level is challenging, exciting and very fulfilling. However, it is not without its worries, notably the great responsibility it places upon one's shoulders to help students to achieve a broad, working understanding of the place of Design in society and through this usually a place on their chosen higher education course. Whilst this responsibility is no less with younger children the intellectual challenge and breadth at 'A' level is such that many teachers worry about their ability to maximise the opportunities for the students under their care.

The aim of this article is to suggest approaches based upon the authors' experiences both as teachers of 'A' level design and as examiners. Whilst this experience has primarily been with the Oxford board it is felt that much of what is written will have value to teachers working under other boards.

Intake

Be bold! Design at 'A' level works best with a broad intake of backgrounds. It is a far better policy to have one Design Faculty 'A' level than allow resources to be split over separate courses in 3D, technology, art, fabric and graphical communication. This can be justified on several counts:

- a. The course members cause a greater degree of cross fertilisation of ideas from their own particular interests and backgrounds.
- b. Such a course encourages a broad approach to design and minimises early over specialisation.
- c. Some of the more specialist 'A' levels are not accepted by Universities, Oxford is. It is worth checking.
- d. Team teaching at 'A' level brings faculty staff together and can have beneficial effects on working and thinking on other courses.
- e. Individuals can develop their particular interests during the major project work, for example, fabrics. Yet this is done on a far broader design base for that student.

The key entrance criteria are not so much 'O' level grades as much as open mindedness, willingness to experiment, enthusiasm and the ability to work hard! In turn staff need to be sensitive to individual differences within the group. The course needs to provide a broad

base for designing but this does not mean forcing individuals into boxes. The course should be structured to gain from the experiences and interests of a broad intake of individuals as much as from the course structure itself.

Staffing

It is possible to run an 'A' level Design course with one member of staff but it demands a great deal of that individual. A team approach is better but an important point is that the team should not be so big or so loose that individual teachers do not feel the personal commitment that is all important. The students will also find it easier to relate to a smaller team of staff.

The teaching team can organise the course around their own areas of expertise but should also bring in outside bodies in order to improve the students contacts and understanding. Examples would be; industry, higher education; advisory; the Design Council etc. There is also a great deal of expertise within the school itself and profitable liaisons can be formed with science and economics departments to name but two. At this point a word of warning needs to be added. Staff should not simply absolve themselves of responsibility for these areas, indeed they should try to team teach and improve their own and the other teachers experiences. Probably the best approach is not simply to have teachers from other areas teach your group but to embark on joint projects — for example a design/make/marketing simulation with the economics department.

Probably the most important factor for any teacher working with 'A' level students is the ability to shed the 'teacher as fount of all wisdom' image and be able to say 'I don't know — lets find out!' — To approach the course as an exciting learning experience for themselves as much as the students.

Group Size

There is a critical mass in teaching 'A' level Design but it is a complex interplay of factors. Too small a group means little interaction or cross fertilization. As most 'A' level design groups are small (2/3) one method is to join both first and second year groups. Whilst not ideal it does help achieve a higher level of interaction.

Whilst a group is unlikely to get too big, staff must ensure that there is a high level of staff contact with students, this is important in order to build understanding, enthusiasm and also for staff to recognise and deal with problems at an early stage. It is fully appreciated that a favourable staffing ratio is difficult to achieve in this day and age. Those in charge of staffing are becoming wary of constant demands for time in Design and have to balance the needs of the whole curriculum. The key technique is to SELL the concept of design to colleagues in the school, build a case which is difficult to challenge.

Time

This will vary from school to school but the mean appears to be about 4 hours timetabled in, for example, 8 x 35 minute periods.

A very useful approach is to have an extra hour timetabled in a studio without staff for supported self study. This gives the student the opportunity to use facilities (other than machinery) in an organised and constructive manner, doing work which is primarily set by staff.

The ability to plan work and meet deadlines is an essential one for all students and yet one which, prior to GCSE, was little developed by traditional techniques. This must be a prime consideration at 'A' level, students need to be self starters who can produce the goods on time.

Facilities

A frequent complaint by teachers is that they have not got the facilities to run an 'A' level Design course. It needs to be made clear that the most important resource is the teacher, the authors have seen successful courses run with very meagre facilities, staff attitudes are far more important. It is possible to expand on the experiences offered to students by using facilities in local H and FE, industry etc.

The ideal facility for any 'A' level Design course is a studio which is exclusively for the group, where they can work, timetabled or not. Work can be left out without fear of it being moved, lost or interfered with. The establishment of such a studio/base is an important factor in the psychology of

the group and will pay dividends in the long term.

Possible Structure and Content for Coursework in Year One

Although the basic structure of the coursework may remain stable over a number of years there will be a need to continually evaluate and reflect upon new developments in technology, new approaches to teaching design, and new areas that may be included in the syllabus. The specific content on the other hand needs to be treated very flexibly each year due to the make up of each different group, the staff and their various interests.

The projects chosen should be both stimulating and demanding for the students. They need to be tackled with an enthusiasm by the staff that will carry any doubting students over the initial hurdle of starting projects that are strange or unfamiliar.

Projects must be seen in context with each other not as isolated items. They should give students as much variety of content as possible and yet allow for a development of understanding of the design process in its widest sense.

Between eight and ten different projects of differing length and intensity can be tackled in the one year and will cover the requirements of the syllabus.

The first project is very important, it must be relevant to *all* the various members of the group — therefore choose something that is based on common ground that can be related to by all the students whatever their backgrounds, e.g.

Graphics Project

A short sharp project — sets the pace and levels of performance expected of the students.

Possible projects:

Logo for folder
Cover for essay folder
Pop-up greetings card etc.

Concepts and areas of work covered

research
design
models/mockups
prototype
first basic report
evaluation but at a fairly subjective level

Ergonomic Project

Longer project — more specific research needs. Introduction to Ergonomics and anthropometrics. An understanding of the application of data from texts and how to generate own data.

Possible projects:

Garden tool
A device to make holding a bucket handle more comfortable
Computer Mouse

Concepts and areas of work covered

various areas of specific research
design
models
prototype
detailed report including what ergonomics is about
evaluation more meaningful than in first project as will be able to have others evaluate product

Photographic Project

An important input project as a recording tool that will benefit the student for the rest of the course.

Possible projects:

produce a book of photographs to communicate specific aspects of:
a street
old and new in a town or city
dealing with rubbish
the market
the fair
Christmas is coming

The recorded work needs to include a range of techniques from close up to wide angle views etc. It should be technically correct but also demonstrate creativity.

Concepts and areas of work covered

how to use a camera
how to develop black and white films and print them (if school has basic facilities)
research concept developed by independent approach necessary to obtain photographs
presentation linked to how industry would present a set of photographs.
short factual report

Material Testing Project

Look at used objects, rather than abstract tests such as houndsfield, as these can be seen and understood in

context. This project can be used to explore the use of materials unfamiliar with individuals, if the make up of the group warrants it. It may therefore need to be one of the early projects.

Possible projects:

Define the operating conditions, test criteria and appropriate tests for:
Cooker knobs
Pan handles
School bags

Concepts and areas of work covered

research situation
Define criteria
Group discussion work on types of tests applicable (Group work an essential element of all designers education)
Devise specific standard tests to reliably assess performance of the various materials
If using this project as a materials exploration project, make up, for example 'cooker Knobs' out of turned wood, cast aluminium, turned acrylic, extruded ceramics
Make test rigs
Write detailed report summarizing tests and making recommendations

Product Evaluation Project

It is important that students relate manufactured products to the work they are doing. It is possible to combine this and the last project if you are not exploring materials as well as testing materials. Care should always be taken not to overload a project with too many objectives as it will become too unwieldy and take too long. Projects need to be short, sharp and busy.

Possible projects

Allow students complete freedom of choice on subject matter
Suggested topics
Tea pots, kettles, tennis rackets, clothes pegs, plastic shopping bags etc.
Do not allow them to simply use catalogues, sales brochures

Concepts and areas of work covered

produce a series of tests that will value the 'product'
market research techniques e.g. questionnaires interviews etc.
presentation of work in form that can be displayed
evaluation in a coherent form

Environmental Project

Possibly a group project. Not easy to assess for examinations but there is room for such important work.

Possible projects:

Designing and making to model stage a playground, or an adventure playground.

Designing and making to model stage a crazy golf course

Designing the inside of a caravan

Concepts and areas of work covered

group work, delegation and responsibility to the group
research both theoretical and in the field
design work
model making — working on a large conceptual scale but with scaling techniques
report writing

Aesthetic/Fun Project

A project to explore the creative generation of ideas in an aesthetic sense

Possible projects:

Modular jewellery from natural forms

Body ornament based on cultural traditions

Childs 3D Fun clock

Floor Cushion based on Architectural or Landscape forms

Concepts and areas of work covered

research of natural forms etc. in the form of photographs, analytical drawings, etc.
designs
experiments with materials
prototype
report and evaluation

Technical Project

Allows 'technical students' to feel 'at home' and 'non-technical students' to be stretched

Possible projects:

Depending on make up of group can vary from:

a 'great egg race'

a method of camera support for a wheelchair

a system for obtaining an aerial photograph of the school

Concepts and areas of work covered:

Detailed technical research leading to specification
Material testing and selection
designing
experimentation in model form
precision engineering
report and evaluation
emphasising the value of mathematics to the designer — though it will be used in other projects also

Industrial Project (working for a client)

If this type of project can be set up then it is a very valuable experience for the students. Teacher needs to go out and talk to local shops, industries etc to see if they have a specific problem that needs tackling.

Concepts and areas of work covered

costings
specifications
liaison with clients
meeting deadlines
the knowledge that your product will be evaluated in real, public sense.

Conclusion

Perhaps the key factor exposed above is the fact that staff need to go far beyond their own workshops and studios in planning and executing coursework. This requires a lot of hard work and organizational skills, however it is vital if the student is to be made aware of the fact that designing is not an activity which can be pursued in an inward looking manner. The product will be used 'out there' and so the research and ideas will be found 'out there'. Teachers do students a disservice by offering safe, inhouse type coursework as this does not develop the skills and attitudes required to tackle major project work. Further to this comes the point that teaching at 'A' level must be seen by teachers as a learning experience for everyone, major projects should not be restricted only to those areas the teacher has expertise in. Seeking advice from external specialists comes easy and profitable if coursework has been structured in a similarly open manner.

Whilst these approaches demand hard work they can pay great dividends in amplifying the fact that teaching 'A' level Design, above everything else, is great FUN.

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