

Designing

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D&T the design
and technology
association

Grand designs

Mark Johnson, Abingdon School

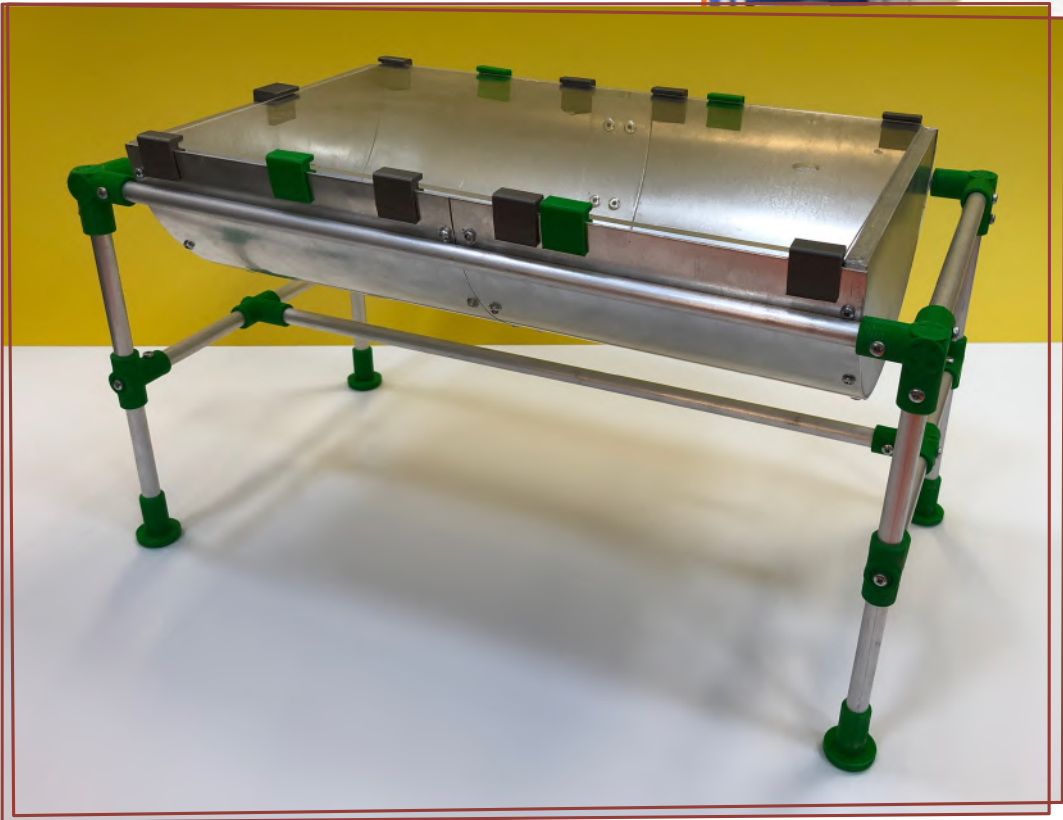
Abingdon School is a day and boarding school for around 1,000 boys aged 11 to 18. We also have a prep school, with its own Design and Technology department. The department is staffed by four full-time teachers and a technician, bringing a wealth of experience with some teachers long-standing in the profession and some having come with relevant industrial experience. D&T is a compulsory subject in Years 7 to 9 and optional at GCSE and A-Level. Numbers are strong with around 45-60 boys taking D&T at GCSE each year and 10-16 at A-Level.



Putting clients first

A big change for us was the introduction of the 9-1 GCSE. At Abingdon it has been welcomed with open arms and the range of outcomes we are now seeing is a breath of fresh air and prepares students better to embark on the A-Level course. One of the challenges we found was how to continue to enthuse students in a subject that now puts much less emphasis on traditional making. I find that the best way that students can find an incentive to succeed is by identifying a suitable client early in the design process. The students that regularly meet with their chosen client to produce real feedback have really embraced the iterative aspect of design that is now needed.

Encouraging students to condense their early design ideas and rein in the expectations is a certain way to gain success. We have had a few wanting to make large pieces of furniture and this has proved difficult in terms of manufacture and securing marks. By far the best projects we have seen are those fully linked to the chosen design context. It can be hard to encourage students to avoid design fixation. I regularly hear students say “I’ve created my final design” when they are in the first week of a project. It is so important to try and avoid this and to get them to think about the design process as a whole iteration of ideas.



Solar-powered cooking device



Design projects

One of my favourite designs is the hand-held solar powered LED light designed to be used in places that have scarce electricity sources. This was for the brief of 'supporting developing countries' and fully fits the brief. The student's regular meetings with his chosen client allowed him to create a range of sketched ideas, leading to high quality models and a final outcome produced utilising a range of CAD, CAM and CNC processes. Keeping projects to this smaller size is a good way to keep on top of things and also allows marks to be secured more easily as they are in a more condensed format.

Another good example of how a student has tackled the NEA is a vaccine storage device also for the brief of 'supporting developing countries'. The student looked at

UNICEF studies and found that keeping vaccines cool in hot climates is a particularly tricky area to tackle. He produced both a physical prototype but also a working example of a Peltier device to prove that the cooling aspects could work. It is certainly worth bearing in mind that the traditional making element can, and should be, a prototype. Testing other elements should be encouraged but not everything has to be in the final piece.

The need for strong client interaction is illustrated with this bamboo walking aid, designed for the brief of addressing the needs of people with disabilities. The student identified a suitable client early in the design process and held regular meetings with him to discuss his individual needs. The student also included a strong range of prototypes to give the user something to actually assess. Constantly refining

their design ideas and producing a range of sketches and physical models really helped him to discover the best way in which to tackle this problem.

The final project here is a solar-powered cooking device, developed for countries that don't have ready access to a fuel source. This again gave the student a good area in which to research and the opportunity to carry out some good first-hand testing. These sections in the portfolio are key to developing a final design that can be presented to the best of their ability.

Design and Technology is a subject that is needed more than ever. Students should be given free choice in how they tackle projects but we must give them the knowledge and skills in how to do so. ■



Hand-held solar light



Vaccine storage device



Bamboo walking aid