AQA

AS
Product Design
7551/C
Report on the Examination

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General

This is the first year of NEA assessment for this qualification and the approach to the NEA is significantly different to previous AS coursework projects. In this series, students were expected to choose one of the three contexts that were published on 1st June 2017. Students were then to identify and investigate a design problem within this context. Where students were given the opportunity to choose their own context from the list of three and their own design problem, they tended to be significantly more successful than those that were tightly controlled by the centre and all following the same or very similar design problem.

Section A- Identify and investigate design possibilities

The more successful students initially considered all three of the published contexts and explored possible design problems within these before selecting their chosen context and final design problem.
Crucial to success in this component is the involvement of a client or potential users of the product all the way through the design process. Where students had a client and used them in their investigation, they generally produced high quality work.
In the investigation, we would expect to see client/user interviews, an investigation of a typical location for the product which might include some measuring. Practical investigations such as; disassembly of existing products, identifying components and their sizes, ergonomic or measuring users for anthropometric data are typical of what we would expect for high marks.
In lower scoring projects, students limited their investigations to internet research or academic research into materials or components that they are unlikely to use.
First concepts were generally communicated well- typically using thumbnail sketching with annotation that indicated how the designs linked to the context.

Section B- Producing a design brief and specification

In the best examples, students wrote an initial brief and specification but then refined these following their investigation. Where students had clearly investigated the context and carried out practical research, they tended to produce more comprehensive design briefs and specifications where the link back to the context was clear. Where investigation was carried out correctly, specifications contained sensible measurable criteria that students could compare their designs and prototypes against. Unfortunately many centres had controlled their students' projects which led to design briefs and specifications being virtually identical. Some students produced design briefs and specifications that demonstrated very little link to the original context and this resulted in the development of prototypes that showed little if any relevance to the context.

Section C- Development of design proposals

This was a very disappointing section with the majority of students failing to demonstrate iterative designing. In the best examples, students took their first concepts and produced more refined design drawings and several models. These were then reviewed by clients and potential users and students would summarise their feedback. This then led to further development of the design which would be communicated with sketching, CAD drawings and more refined models. Rarely, students produced test pieces and trialled different materials or combinations before selecting their chosen methods. Again, in the best examples, students produced a clear manufacturing plan, a manufacturing specification, and a good working drawing.

Unfortunately, many students virtually re-drew one of their concepts. Typically they would make a single model and if a working drawing was produced, it would be missing critical detail or important dimensions. Such work would not attract marks other than in the bottom mark bands.
This section was generally over marked by centres. Where students follow a set formulaic approach with a 'given' number of design ideas, and then do not engage in an iterative development process, they will not gain high marks.

Section D- Development of design prototypes

Generally, students made good use of photographs and notes to describe how they made their prototypes. In the best examples, students produced more than one prototype. Typically, early prototypes were tested and shown to a third party and students used this feedback to refine their final prototype. Also, the best examples showed the use of a range of skills in making their prototypes. In some centres, there was an over reliance on the use of CAM and little use of hand or manual machining skills. Students who used CAM to make part of their prototype and the rest by hand, generally scored much better than those who solely used laser cutting, 3D printing or CNC routering. In a small number of cases, students did not provide adequate photographic evidence of what they had made. This resulted in delaying the moderation of their NEA whilst moderators requested more or better photographs.

Section E- Analysing and Evaluating

Students who worked with a client and or potential users were able to demonstrate excellent or good on-going analysis and evaluation. Many students involved the client with reviewing their design ideas, evaluating models and testing different iterations of prototypes. In addition to this, students who had experimented with materials and making techniques were able to further evidence of on-going analysis and evaluation.
Once prototypes were completed, the better projects showed testing in the intended environment and included objective third party feedback. Students then went on to suggest improvements to their prototypes by using notes and diagrams to show modifications.
Sadly, the majority of students did not pay much attention to how the prototype would change for commercial manufacture. Many students simply said their product would be "made by using CAM" in order to make it in large numbers. At this level, we would expect students to produce annotated diagrams to explain how parts of their prototype might change for commercial manufacture.

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the Results Statistics page of the AQA Website.