



## External Assessment Report 2014

|            |                |
|------------|----------------|
| Subject(s) | Product Design |
| Level(s)   | Intermediate 2 |

The statistics used in this report are prior to the outcome of any Post Results Services requests

This report provides information on the performance of candidates which it is hoped will be useful to teachers/lecturers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published question papers and marking instructions for the examination.

# Comments on candidate performance

## General comments

The Course assessment of Intermediate 2 Product Design consists of two equally-weighted components:

- ◆ Question Paper – 50 marks
- ◆ Design Assignment – 50 marks

In both components of the assessment, candidate performance in 2014 was broadly similar to previous years.

## Areas in which candidates performed well

### Question paper

- ◆ Q1(a): This question proved to be a gentle introduction, with most candidates scoring well, averaging 6 marks out of 8.
- ◆ Q2: This question was accessible for most candidates, and the majority attained 3 or 4 of the available 5 marks.
- ◆ Q3(a), (b), (c): These parts of question 3 were well answered by the majority of candidates, most scoring 4 or 5 out of 6.
- ◆ Q5: Most candidates did well here. A significant minority appeared to have absolutely no knowledge of which processes were relevant, but the norm was to get 3 or 4 correct out of 5.
- ◆ Q6 (c) and (d): These parts of question 6 were well answered by the majority of candidates. Candidates were comfortable with suggesting suitable aesthetic questions for a survey, although some failed to gain both marks due to vague or repetitive responses.
- ◆ Most candidates knew the meaning of the plastic/recycling symbol.

### Design Assignment (DA)

The Design Assignment Guidance for Candidates is available on SQA's website. It gives clear information regarding how the Design Assignment is marked.

|              |          |
|--------------|----------|
| Section 1    | 10 marks |
| Section 2    | 20 marks |
| Section 3(a) | 10 marks |
| Section 3(b) | 5 marks  |
| Section 3(c) | 5 marks  |

Candidates performed best in Sections 1 and 3(c).

**In Section 1: Initial Ideas**, candidates tended to score 8, 9 or 10 out of 10. This is probably attributable to the general enthusiasm of a new activity combined with a realisation that this task will be contributing to their final mark.

However, a small minority of candidates produced extremely simplistic, and/or, repetitive initial ideas. As these were considered to be lacking in creativity, they did not score highly.

At the other extreme, some candidates produced extremely good ideas, **but included too much specific detail**. If candidates are too specific in this section, it makes it more difficult to expand on these initial ideas and develop them, later on in the folio.

**Section 3(c)** is a Graphic or Model of the final **Design Proposal** and candidates tend to do well in this section, with work in this category regularly attracting 4 or 5 marks out of a possible 5.

More and more candidates are able to enhance their work in this section with computer graphics and, provided the projection or viewpoint is chosen wisely, most candidates using CAG software for a rendered 3D image score the full 5 marks.

## Areas which candidates found demanding

### Question paper

- ◆ Q1(b) Historically, candidates tend to get confused between these three aspects of ergonomics, and this year was no exception. This continues to be surprising as the format of this part, Q1(b), has been virtually unchanged for ten years. Many candidates scored only 2 out of the available 6 marks.
- ◆ This part of the question requires the candidate to respond by linking a suitable human dimension to an appropriate part of the illustrated product. They should do this **twice**. A significant number only did this **once** and responses thus attracted only one mark.
- ◆ This part of the question requires the candidate to respond by linking a suitable human activity (usually a verb; lifting, carrying, sweeping etc) to an appropriate aspect of the illustrated product. They should do this **twice**. Again, a significant number only did this **once** and responses thus attracted only one mark.
- ◆ Too many candidates responded with purely **aesthetic** comments about the product rather than **psychological**. Few of these aesthetic comments attracted a single mark, let alone two marks. The best responses were those which referred to some kind of sensory back-up or a 'feeling' which was induced by the appearance; eg '...the brush handle clicks into place in the dust-pan, letting the user know that it is properly located...', ' the cool colours of light blue and white give a feeling of hygiene.....' etc.
- ◆ Q1c) Most responses were vague, and didn't address the question which asked 'why' each was important. Average scores were around 2 out of 6.

- ◆ Q3 d) 'Standard components' were unfamiliar to many candidates, and others lost out by repeating advantages/benefits which they had previously suggested for parts (b) and (c). The average mark was around 1 out of 2.
- ◆ Q4 Candidates' responses here suggested that they were really only familiar with one idea-generation technique and many struggled to describe a second one. The most popular were 'brainstorming' and 'mood-board'. The **descriptions** of how they could be used, however, were very poor, evidencing a general inability, amongst the candidates, to describe something of which they actually had first-hand experience. Averages here were 1 or 2 out of a possible 4.
- ◆ Q6(a) and (b) Similar to question 4, above, candidates were once again asked to **describe** a user trial and a test. Their responses weren't helped by the fact that many candidates seemed to be confused by the meaning of 'user trial' and 'test'.
- ◆ Giving a **description** seemed to be challenging for many candidates and resulted in scores of 1 or 2 out of 4 being common.

### Design Assignment (DA)

Candidates found Sections 2, 3(a) and 3(b) most demanding.

Section 2, Design Development, is the section that seems to give candidates the most difficulty. Candidates are supposed to make alterations to one (or two) of their initial ideas, in order to let it gradually evolve into a final Design Proposal.

Candidates would be expected to change the shape and form of the concept as well as make suggestions for alternative materials and methods of construction.

The poorest Assignments showed virtually no evolution of the product from Initial Idea through to final Design Proposal.

Many Assignments made no reference to either the researched images or the anthropometric data that is included in the Design Assignment task published by SQA. This is given to assist candidates with the task, but also to give them the opportunity of gaining some reward for its appropriate use. It's all there for a reason, and it would not be inappropriate for teachers to give candidates some guidance that they should **use this data**.

Section 3(a), **Communication**, gives candidates the opportunity to gain marks for communicating clearly. If the work flows, is easy to follow, and easy to read with high quality graphics, it is likely to score highly. Similarly, if it is unambiguous and lacking both confusion and contradiction it should do well.

Section 3(b), **Decisions**, is done very well by some candidates and very poorly by others. Candidates are expected to give some justification for the statements they make. Candidates write things like: 'This **could** be made of **mild** steel as it doesn't rust'. Unfortunately this loses out in two ways:

- ◆ It is factually incorrect as mild steel does rust.

- ◆ The candidate isn't actually making a decision as they are saying that it **could** be made from mild steel, not that it **should** be or that it **must** be.

If they had written: 'This **should** be made from **stainless** steel as it doesn't rust', that would clearly score a mark. Decisions have to be positive statements, not **could** be or **might** be or **may** be; and have to be factually correct. Do this, **clearly**, five times in order to score 5 marks.

Clearly, justified decisions need to be appropriate to both the level of the course and the maturity of the candidates who have followed the Intermediate 2 Product Design course. For example, if a candidate wrote that they were going to paint a wavy blue line on something, to give it a nautical theme, that would be judged as too immature to gain marks.

Ideally, candidates should make justified decisions regarding materials, processes, construction methods etc, as these would be likely to have little ambiguity and would almost certainly be based on factual knowledge gained during the course.

## Advice to centres for preparation of future candidates

### Question paper

Teachers should familiarise themselves with the relevant Examination Marking Instructions, which are published annually on SQA's website.

The best preparation is to give candidates the opportunity to work through past papers. This could be a whole-class activity initially, with the teacher explaining the nuances of each question and what is expected as a response.

Thereafter, candidates should work through as many past papers as possible for practice, and be given constructive feedback on their responses.

It is important that candidates are given feedback from the teacher regarding their responses, so that they can learn both what is, and what is not, an appropriate answer.

### Design Assignment (DA)

This activity is 'set' by the SQA each year, and is issued at the end of January in the year of presentation. Thereafter, it is completed during class time, within centres, as an activity lasting a few weeks, during February/March/April. Subsequently, it is externally marked by SQA.

Centres should ensure that they are using the current Design Assignment (2015) and not one which was issued in a previous year.

Candidates choose **one** of the four Design Tasks available.

It is important that teachers **do** give some guidance to candidates regarding the **structure** of their Design Assignments; it is an eight-page document which needs appropriate emphasis to attract as many marks as possible.

It is similarly important that teachers **do not** give assistance to candidates concerning the specific content of this assignment, as the work should be the candidate's own.

'Guidance for Candidates' is available for the Design Assignment, from the SQA website. Candidates should be given a copy of this as it is imperative that they use it, to gain as many marks as possible. Among other things, the document includes 'range statements', which explain what is required for success in various aspects of the activity, guiding each candidate towards what specific content should be included.

There is no official time allocation published for the Design Assignment; between the publication date and the submission date, each centre has freedom to allocate whatever time it deems appropriate. It is however, not necessary to spend two or three months engaged in the task to score highly — two or three weeks is more appropriate. Something between 10 and 20 hours of class time would seem to be the norm in centres across Scotland. Centres going beyond this time allocation are unlikely to be further increasing their candidates' marks for this activity.

Indeed, candidates who only submit six or seven sheets of A3 paper, rather than the maximum of eight, sometimes score in the high forties, even 50/50 on occasion. Quality rather than quantity is important.

Teachers should constantly be referring candidates to the Guidance for Candidates document. This allows them to self-assess and see if they are placing appropriate emphasis on the activities in the DA which attract marks.

A structured approach that follows the advice in the Guidance for Candidates document, and clearly addresses the Specification in the relevant Design Task, is the best recipe for success.

## Statistical information: update on Courses

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|------------------------------------|------|
| Number of resulted entries in 2013 | 1090 |
|------------------------------------|------|

|                                    |     |
|------------------------------------|-----|
| Number of resulted entries in 2014 | 885 |
|------------------------------------|-----|

## Statistical information: Performance of candidates

### Distribution of Course awards including grade boundaries

| Distribution of Course awards | %     | Cum. % | Number of candidates | Lowest mark |
|-------------------------------|-------|--------|----------------------|-------------|
| Maximum Mark                  |       |        |                      | 100         |
| A                             | 32.9% | 32.9%  | 291                  | 73          |
| B                             | 23.3% | 56.2%  | 206                  | 63          |
| C                             | 20.6% | 76.7%  | 182                  | 53          |
| D                             | 6.9%  | 83.6%  | 61                   | 48          |
| No award                      | 16.4% | -      | 145                  | -           |

## General commentary on grade boundaries

- ◆ While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.
- ◆ Each year, SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.
- ◆ The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ Where standards are comparable to previous years, similar grade boundaries are maintained.
- ◆ An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions, are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in, say, Higher Chemistry, this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related, as they do not contain identical questions.
- ◆ SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as arrangements evolve and change.