

Principal Assessor Report 2005

Assessment Panel:

Technical Education

Qualification area

**Subject(s) and Level(s)
Included in this report**

Higher Product Design

Statistical information: update

Number of resulted entries in 2004	2,419
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Number of resulted entries in 2005	2,092
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General comments re resulted entry numbers

A reduction in numbers again this year which could again be a result of candidates moving to Intermediate 2. This however could also be a result of candidates choosing a Practical Course in either wood or engineering craft skills. The continuing drop in numbers is a worrying trend which hopefully will be halted by the results of the NQ review which has restructured the course and reduced the pressure caused by the effects of the old Design Assignment.

Statistical Information: Performance of candidates

Distribution of awards including grade boundaries

Distribution of awards	%	Cum %	Number of candidates	Lowest mark
Maximum Mark- 140	-	-	-	-
A	10.1	10.1	212	98
B	18.9	29.0	395	81
C	28.0	57.0	585	64
D	15.2	72.2	319	55
No award	27.8	100.0	581	-

General commentary on passmarks and grade boundaries

- While SQA aims to set examinations and create mark schemes which will allow a competent candidate to score a minimum 50% of the available marks (notional passmark) and a very well-prepared, very competent candidate to score at least 70%, it is almost impossible to get the standard absolutely on target every year, in every subject and level
- Each year we therefore hold a passmark meeting for each subject at each level where we bring together all the information available (statistical and judgmental). 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 senior management team at SQA
- We adjust the passmark downwards if there is evidence that we have set a slightly more demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- We adjust the passmark upwards if there is evidence that we have set a slightly less demanding exam than usual, allowing the pass rate to be unaffected by this circumstance
- Where the standard appears to be very similar to previous years, we maintain similar grade boundaries
- 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 are different. This is also the case for exams set in centres. And just because SQA has altered a boundary in a particular year in say Higher Chemistry 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
- Our main aim is to be fair to candidates across all subjects and all levels and maintain standards across the years, even as arrangements evolve and change.

Comments on any significant changes in distribution of awards/grade boundaries

Allowing for the interpolation of marks from the possible 200 marks in 2004 to 140 marks maximum in 2005, there was no change in the 'C' grade boundary. There was continued improvement in the response to the Design Assignment but it was still disappointing to see the average mark for the written paper (31/70) being so poor. Markers comments were that the marks were accessible to all candidates and this was borne out by the marks of the 'A' grade and 'B' grade candidates whose marks were as would have been expected for a 140 mark examination. 'C' and 'D' grade candidates did not perform nearly so well in relationship and found it hard to achieve marks in certain questions. These were the candidates whose responses were of the bullet point or one word answer type and so did not accrue marks.

Comments on candidate performance

General comments

Paper 1

This paper shows a change in format from previous years and was generated closely following the format used in the exemplar material.

Candidates are still answering questions which start with explain and describe with bullet point or even one word answers. This type of response does not allow candidates to gain good marks for questions. The questions are designed to show whether candidates have an understanding of issues and cannot be answered satisfactorily in this manner. Answers must be justified to show knowledge and understanding of issues to gain full marks. Answers in quite a percentage of candidates showed a poor technical vocabulary which meant that explanations and justifications became waffle.

There was also evidence of candidates either not understanding or not reading questions carefully

In general in a four mark question which asks for a description or an explanation a paragraph with at least four valid but completely different points or issues pertinent to the question would gain one mark for each point or issue.

- Bullet points generally do not allow candidates to show understanding as they are not qualified and/or explained.

Question 1 (30marks)

- Many candidates specification points were too simplistic and were reminiscent of Standard Grade. They had not made the leap to higher.
- Candidates knowledge of materials choices were mainly aesthetic and showed little understanding of mechanical properties.
- Answered reasonably well
- Issues on quality were answered quite well but answers were very short.
- Answered reasonably well
- Candidates knowledge of environmental issues was quite good but their answers once again were minimal and lacked expansion into full answers.

Question 2

- Answered reasonably well
- Answered quite well
- Candidates answers were short and limited in description, more extension would have enabled more marks to be awarded

Question 3

- Candidates showed little understanding of IPR
- Answered quite well, familiar question similar to questions from old C&D paper
- Generally answered quite well, but some candidates gave general answers which could describe characteristics of any thermoplastic. The question was about ABS in particular and what set it aside from other plastics which could have been used in the injection moulding process.

Question 4

- Mixed results from candidates and indeed in some cases from centres
- Generally answered quite well

Question 5

- Candidates who gave expansive answers to this question generally performed well and there were some excellent responses to this question which was quite straight forward. Other candidates however gave extremely poor responses. There were very few in the middle

- b) Not well answered. Candidates responses in the main dealt with marketing issues when the question quite clearly was about manufacturing techniques and issues. Candidates must be trained to read questions carefully before answering.

Question 6

- a) Probably the best answered question in the paper.
b) Along with the above well answered

Design Assignment

Centres were given a choice of design options this year based upon a theme. This was done to produce a more level playing field for candidates and also to avoid the DA taking over the course as it had in the past. The range of tasks was devised to give as much opportunity as possible to candidates whilst being able to keep a level of control on the assessment process.

Candidates were given four scenarios; some gave opportunity for creativity and expression while others were of a more technical nature. **This was done to enable candidates with a wide variety of talents and with a wide background in knowledge to be able to show their capabilities. It is essential that this is taken into account when candidates choose the topic they are about to embark upon.**

The Design assignment follows a new format where candidates are limited to 8 pages of material. Some candidates produced complex front covers and contents pages which this year were not counted in the design folio. This is unnecessary work and is not required for presentation. What would help assessment is if the pages are numbered so that the sequence of the design folio can be identified more easily. In some cases this was not obvious.

The format was generally followed, but there were a few instances of folios exceeding 8 pages in these cases the first 8 pages were assessed in line with the Design Assignment Specification and the rest were ignored. There were also some instances of candidates using A4 formats and also a mixture of A4 and A3. The DA specification clearly states **8 A3 single sided pages**. There were some centres who had fold out photos attached to A3 sheets with text behind them, thus gaining extra space for their folios. This is not allowed and will get the same treatment as extra pages in the DA.

Section 1 Initial Ideas (15 marks)

Some centres cut out or reworked the information given in the Design Tasks which were issued to centres. This accrued no marks in the assessment and as such only used up space in the 8 pages available to candidates, also the production of new mood boards and further investigation of the topics was generally found to be of little advantage to candidates unless it was obvious how this was tied into the generation of ideas. In most cases this was done by annotation and it was this that accrued marks.

The section however is generally done well by candidates although candidates still do not highlight decisions which are being made throughout the folio and don't refer these back to the specification.

In some cases candidates had used 4 or 5 pages for this section which only left the balance of their 8 pages for the next phases of their DA. Some time spent before in class looking at the balance of their work and relating this to the DA Spec could have avoided some of this.

Section 2 Development of ideas towards a Design Proposal(30 marks)

This is where the more able candidates tend to gain significantly more marks than the rest of the field. Developments of ideas can be aesthetic, can use information from the research material supplied with the DA topics, can look at construction methods. All should show progression, sketches must be well annotated and relevant to the topic. Decisions should be being made throughout the folio and highlighted. This section is awarded 30 marks and should be where most of the marks are gained by candidates; this was not the case in some instances.

Section 3 Communication

This is split into three sections

Section 3 a Communication of ideas towards a design proposal (10 marks)

The marks awarded for this was the communication information both graphical and textual throughout the

Design Assignment. Examiners are looking for links to the information given, use of the specification and progression of ideas and developments towards a final design proposal. The candidate's folios which performed well clearly demonstrated this. In most cases this progression was not obvious.

Section 3 b Recording decisions made in producing a design proposal

Again marks are allocated right across the folio for this. In many cases decisions made were not justified and evaluated so that it was not clear why they had been reached. Decisions in many cases were just plucked out of the air.

Section 3 c Communication of Design Proposal

Generally well done. Candidates used a variety of techniques, manual graphics, computer modelling, block modelling with annotation and justification.

General comments

The new format has been well received and has generally raised the standard of the Design Assignment. This may be as a result of the more focussed nature of the tasks and the concentration of the effort into a shorter timeframe.

Markers comments show that it is essential that care is taken in the choice of topic and a one topic suits all policy does not work. All topics should be carefully analysed and thought through before work commences, this is not part of the examination process. The 10 hours start when the candidate starts work on page 1 of their generation of ideas.

Centres must guide the candidates to plan and use their time well. There is nothing wrong with spending time analysing the Design Tasks and producing a plan for the completion of this task before candidates start. The guidance given in the DA specification and DA specimens are crucial to the successful completion of this part of the assessment.

Areas of external assessment in which candidates performed well

Paper 1

Question 1 (c)
Question 2 (a), (b)
Question 6 (a), (b)

Design Assignment

In general candidates performed well in the generation of ideas stage of the assignment. There were instances where it was doubtful if centres have followed the Design Assignment Specification in that the folio should be completed in 10 hours. The production of graphical information was in general better than in previous years.

Areas of external assessment in which candidates had difficulty

Paper 1

As detailed in the previous section questions 3, and 5 posed problems

Question 3 (a) This was a straight forward question based upon Intellectual Property Rights which is a new topic for the paper. All centres have been issued with extensive notes on this subject and there were questions on this and Rapid Prototyping in the Specimen paper. It is disappointing therefore that this question should have presented difficulties.

Question 5 (a) A mixture of responses mostly either answered very well or very badly with no real spread of answers

(b) Answered poorly with candidates answers based upon marketing rather than production issues.

Design Assignment

Candidates did not leave themselves enough room to adequately develop their ideas. There is still some difficulty with this section for less able candidates. Candidates who attempted the lighting fared less well than those who chose seating as their Design Task. This was due to the more technical nature of this design. This is where the classroom teacher is very important. The guidance of the teacher at the preparation stage before candidates commence their Design Assignments is crucial. Candidates must be encouraged to choose the task carefully so that the topic suits their strengths and gives them the opportunity to perform to their best ability.

Some Design tasks allow more creativity aesthetically while other allow for more technical detail and development.

Recommendations

Feedback to centres

Make sure that the exemplar material on the SQA website is being used to illustrate the new format of the Design Assignment.

There are SQA examiners and markers from all authorities who have been at the central marking event this year, perhaps these people if they are willing to identify themselves can help on in- service days. SQA can be contacted to provide development visits on Unit assessment.