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Principal Moderator Feedback

Summer 2010

GCE

GCE Engineering: 6932 01
THE Role of The Engineer

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Principal Moderator Report GCE Engineering

Unit 2: The Role Of The Engineer

As in previous series, a wide range of scores was submitted and the portfolios generally contain evidence which reflects either minimal effort or full commitment, and the full range in between.

A small number of centres still feel the need to send work for moderation bundled up in folders, binders, comb bound, etc, and each year we ask that the portfolios are treated like any other examination material, which is the use of one treasury tag through the top left hand corner of the A4 sheets of paper. Anything else impedes the processes of moderation and awarding. Centres are asked to consider the use of resources and wastage of paper/folders, etc, excessive postage and available space in a moderator's home before posting the samples.

Appendices – a few centres also continue to allow, or encourage their candidates to submit work with appendices totalling up to 10 or times the volume of the actual work. If any work is important, it should go in the main body. If reference is required to some source of material, the source (book or website) is adequate, or perhaps a sentence or paragraph will do, which could easily go into the report itself. Bear in mind that many excellent portfolios, scoring well into the 50s, have been moderated and they contain no more than a dozen to twenty pages of A4, taking between 2 and 4 pages per section.

Annotation is improving in some centres, by using the verbs from the assessment criteria, e.g. – describe, explain, justify, etc – written alongside the evidence in the margin. This helps the moderator locate the relevant evidence and more easily agree the marks awarded, or not.

Most centres are now benefiting from the links they have created with engineers/industry and the work shows this. Several portfolios still start with a few pages describing the range of engineering sectors and/or giving a company history in full detail, when a brief introduction of half a page, or less, would be adequate. Always bear in mind when assessing the work – if it doesn't directly attract any marks, don't include it.

The best advice, which is a reflection on existing good practices, and the way to ensure access to all assessment criteria should include more than a single visit to see a company or engineer to allow a developing relationship and generation of material which is focussed across the mark bands.

A small number of centres still don't appear to have read the specifications and have never attended INSET or followed the guidance in their centre reports. Some of them complain about their work being adjusted at moderation, but seem not to take heed of any advice or support being offered.
Comments of QWC were made occasionally, but this a new concept and should develop over a few series.

Where the centres obviously left the school and found engineers to investigate, the performance is generally better – by far.
Some attempts at 'internet' or 'imaginary' investigations, made obvious by comments like 'I would expect an engineer to do....' etc, didn't do well.

a) Candidates who made the effort to visit and identify the activities of an engineer provided better reports. Some centres claim to be limited in local availabilities. Where products are investigated instead of services, things are more straightforward.
In this section, as in previous series, where description and justification for the tasks carried out by their engineer is required, some candidates tended to provide a list of processes which take place when a specific job is being done. A reducing number of candidates are using ill thought out questionnaires which have been used to obtain some details from the engineer, but the details are of little relevance to the unit. Some candidates have been working closely with their own engineer on work experience or regular visits and these generally tend to perform better across the mark bands than those who all visit, or are visited by, one engineer who tells them of their work. The former leads to thorough portfolios, but the latter tends to lead to a set of portfolios which are all very similar. A few candidates appear to be doing a lot of work and compiling massive amounts of detail, but little of it is relevant to the unit, and this tends to indicate either poor guidance from their tutor or poor understanding of what needs to be done.

b) Technologies – for this section, many candidates still seem to interpret the word 'technologies' to mean machinery, which is only one of the range of requirements indicated in the specifications. Many, if not all, include CAD and CAM and a range of 'machine operations' such as turning, drilling and milling. Communications and control systems – of processes and of engineering operations, services, record keeping, monitoring, etc a- all make use of technologies across many areas of engineering and tend to be missing from the majority of reports.

c) Some candidates described contents of the legislation or standard, without identifying what the legislation or standard was. This is usually evident across portfolios in relation to PPE and risk assessment. There were examples of contract law and rights of employees. Non compliance was discussed by some candidates and high marks were achieved, but most didn't. Standards tend to be general and not clearly stated. Few included how the engineer ensured the standards were met, with many candidates saying, simply, 'because they have to', or similar.

Some candidates did well with this section, but they were in a minority. As in previous years, 'c' and 'd' have been overlapped and confused by several candidates, and the moderators are flexible with this, and allocate marks for the contents, even if in the wrong section – but also include guidance to avoid it in the future. Some candidates gave a good range of standards, BS and CE, ISOs, etc, and the legislation for the environmental impact reduction, clean air act, etc, were thoroughly covered by some, as this is becoming more general knowledge across society than just in specialist studies.

d) Health and Safety, in the main, was related to provision under the HASAW (etc) Act 1974. Not much evidence was seen in the higher mark bands and in the main the descriptions were quite general and not related to the engineer and the product/service.

Several candidates did, however, perform quite well with this section, but many are still not reading the criterion. 'Identify' suggests that the health

and safety standard, or associated legislation, should have a name, but many referred to 'risk assessments' without mentioning the acts or regulations which require them to be done, such as the Management of Health and Safety at Work Regulations or PUWER and the rest of the 'Six-Pack'. The way companies interpret these to develop their own 'standards of working' are expected for this criterion, but rarely covered in any detail.

e) Inappropriate guidance with the choice of engineer and product/service meant that some of the evaluations were difficult to produce. Often the statements were simple and many had assessors had marked this section generously, leading to potential reduction in marks following moderation.

   It is pointed out each series that if the product/service is not simple enough for a 16/17 year old to evaluate and criticise effectively, then the product or service is the wrong choice. This needs establishing very early on in the candidate's studies to save wasting many hours of research and writing. ' Some candidates incorrectly wrote lengthy appraisal reports about the whole company and this is inappropriate. Candidates must be reminded that the subject is engineering, and their focus must be on the role of a particular engineer and the work s/he carries out.

f) Following on from the evaluations, the modifications were quite simplistic in most samples, but this is a high level skill, and needs a good section 'e' to allow effective suggestions for improvement to be made. Very few candidates include diagrams to help with their explanations or ideas. Many suggestions were unrelated to section 'e' or contained trivial comments only, such as 'use low energy light bulbs' or 'employ more helpers'.

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Statistics

Grade Boundaries 6932 The Role of the Engineer

Grade	Max. Mark	A	B	C	D	E
Raw Boundary Mark	60	46	40	34	29	24
UMS	100	80	70	60	50	40

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