

# **National Qualifications 2006**

## **Senior Moderator Report**

**Subject: Chemistry; Advanced Higher Investigations**

**Assessment Panel: Chemistry**

The purpose of this report is to provide feedback to centres on moderation which has taken place within National Qualifications in this subject.

## NATIONAL UNITS

### TITLES/LEVELS OF NATIONAL UNITS MODERATED

Chemistry; Advanced Higher Investigations(Retrospective Moderation)

### FEEDBACK TO CENTRES

#### General comments:

A considerable improvement was seen at this moderation event and for the first time over 50% of centres moderated had no issues identified. Most of these centres made use of the Record of attainment given on page 18 of Chemical Investigations DO75 13/NAB 001 (issued July 2002 to replace NAB issued April 2000).

The evidence submitted by most of the centres where issues were identified should not have been awarded a pass for the half unit DO75 13.

#### Specific issues identified

An increased awareness by staff and candidates of the performance criteria for the half unit could improve the quality of the externally assessed report. The majority of centres moderated in previous years and moderated again this year showed such awareness, as did a minority of the centres which had not been previously moderated.

Centres are responsible for keeping evidence of internally assessed work and it is the daybook, not the final report, which must show evidence of candidates overtaking the PCs for this half unit.

NAB DO75 13/001 is internally assessed so, before a candidate is recorded as having passed the half unit, there must be evidence that the NAB has been marked. Evidence seen at moderation indicates the majority of centres assume candidates have passed NAB DO75 13/001 without any formal check to see whether the PCs which make up O1 and O2 have been overtaken.

#### Outcome 1    Develop a plan for an investigation

PC(a)        Entries made by the candidate in a daybook should be dated and contributions from teachers/lecturers should be dated and initialed. This half unit is internally assessed so the evidence must clearly show that on-going assessment has indeed taken place.

PC(b)        A clearly thought out aim is the foundation on which successful experimental work is built. Teacher/lecturer input at this stage can avoid later problems with inappropriate apparatus and techniques as well as facilitating the final analysis of collected data.

PC(c)        Some daybooks seen at moderation showed that little (or no) raw data had been gathered by the candidate. When this occurs it is generally because experiments are attempted which are out-with the scope of a school lab. Staff/candidate interaction at an early stage can prevent this wasted time.

## Outcome 2 Collect and analyse information obtained from the investigation

PC(a) The centre is responsible for ensuring that collection of information is the individual work of the candidate and that it is carried out with due accuracy.

PC(b) A daybook is a working document and is not expected to be particularly tidy. It is, however, in the candidate's interest to record data accurately and with appropriate units as this avoids contradictions and errors in the final report. In the evidence seen, units were often absent and occasionally incorrect. Tables are a convenient format and titration results should show initial volume, final volume and difference. If data logging is used additional printouts can be attached to the daybook.

PC(c) The main cause for concern was the acceptance of evidence which showed little or no sign of experimental information being analysed or presented in an appropriate format. Calibration curves and calculations needed to check predictions are appropriate in a daybook but there is no need to duplicate work. This PC could be overtaken by attaching a photocopy of marked pages from the first draft of the final report.

### **Recommendations to be considered for the future**

Some centres sent a copy of the final report as part of the evidence that O2 PC(c) had been overtaken. There is some justification for this because at the point when the candidate is in a position to *analyse recorded experimental information* the final report is generally half written and analysis in the daybook would be a duplication of work done in the report. Moderators should not be expected to read through the (externally marked) report to find assessment evidence, it is the daybook, not the final report, which must show evidence of candidates overtaking the PCs for this half unit, however, there is an argument for the inclusion, in the daybook, of photocopies of evaluation destined for the report. This would satisfy the requirements for DO75 13 NAB 001, O2, PC(c) without causing candidates extra work at a very busy time of the year.

### **Advice on good practice and areas for further development:**

A considerable improvement was seen in the assessment of evidence supplied and, for the first time, more than 50% of centres moderated had no issues identified.

Centres are responsible for assessing and then retaining evidence for the internally assessed half unit DO75 13. The evidence supplied for moderation must contain indications of having been seen and marked. A tick, initialed and dated, after each teacher/candidate discussion is sufficient. It is the evidence of planning seen in the daybook which shows a candidate has overtaken the PCs for Outcome 1 of this half unit.

A daybook represents a record of the progress of the investigation and, as such, should be filled in regularly with a date next to each entry. Aims should be clearly stated and should precede the record of practical work.

The quality of the externally marked report will be improved if candidates plan their investigation carefully. Staff input and advice at this stage will stop time being wasted and enable candidates to produce valid conclusions and evaluations in the final report.

Daybooks should record raw data in whatever form it is collected. If data logging is used printouts can be attached to the daybook.

In order to overtake Outcome 2, PC(c) experimental information must be analysed. Potential errors identified in the planning stage, calculations used to check predictions, calibration curves, reference data, etc. are all appropriate in a daybook but there is no need to duplicate work.

As stated in the NQ update letter (March 2006) all candidates should be issued with Advice to Candidates (pages 22-24, Chemistry Investigations DO75 13/NAB 001) and the Advanced Higher Chemistry Investigation Guidance ([www.sqa.org.uk](http://www.sqa.org.uk)).

Where the candidate is taking a combination of AH Chemistry, AH Physics and AH Biology the centre must ensure that different investigations are carried out for the awards. Submission of the same investigation may result in one or all of the awards being cancelled.