



National Qualifications 2007

Senior Verifier Report

**Subject: Chemistry; Advanced Higher Investigations
Retrospective Verification of D075 13**

Assessment Panel: Chemistry

Lead Officer: Andrew Shield

Senior Verifier Name: Frances Macdonald

NATIONAL UNITS

D075 13 CHEMICAL INVESTIGATION

FEEDBACK TO CENTRES

General comments:

All centres verified at this event had not previously been seen at retrospective verification events. An improvement was seen in assessment of candidate evidence. 70% of centres verified were accepted (had no issues identified), 20% established an exemplary standard of documentation (use of a PC checklist, customised or taken from pages 17/18 of D075 13 NAB 001) as well as evidence of consistent and productive teacher/lecturer interaction with each candidate. Candidate evidence for the 30% of centres where issues were identified should not have been awarded a pass for this half Unit.

Specified issues identified

Centres are responsible for keeping evidence of internally assessed work and it is the daybook, not the final report, which must show evidence that a candidate has overtaken the PCs for this half Unit.

NAB D075 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 verification indicates a significant number of centres assume candidates have passed NAB D075 13/001 without any formal check to see whether the PCs which make up O1 and O2 have been overtaken.

An increased awareness by staff and candidates of the Performance Criteria for the half Unit could improve the quality of the externally assessed report.

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. Some daybooks seen at verification showed that little (or no) raw data had been gathered by the candidate. Staff/candidate interaction at an early stage can prevent wasted time.

Recommendations to be considered for the future

At the 2007 event, some centres sent a copy of the final report as part of the evidence that O2 PC(c) had been overtaken. At the point when the candidate is in a position to *analyse recorded experimental information*, the final report may already be half written and analysis in the daybook would be a duplication of work done in the report. Verifiers should not be expected to read through the (externally marked) report to find assessment evidence, it is the record of work, not the final report, which must show evidence of candidates overtaking the PCs for this half Unit, however, there is an argument for inclusion, in the daybook, of photocopies of evaluation destined for the report. This would satisfy the requirements for NAB D075 13/001, O2, PC(c).

Advice on good practice and areas for further development:

A number of records of work (daybooks) were little more than records of raw data. This was the nature of CSYS daybooks, but the record of work is now a half Unit of the AH Course and this change has to be recognised and acknowledged.

Most centres, where issues were identified, showed little or no sign of assessment of candidate evidence. NAB D075 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 verification indicates a number of centres assume candidates have passed NAB D075 13/001 without any formal check to see whether the PCs which make up O1 and O2 have been overtaken.

Material from centres where no issues were identified often had limited evidence of assessment by staff and no indication of where, in the record of work (daybook), each individual PC had been overtaken. Entries made by the candidate in a daybook should be dated and contributions from teachers/lecturers should be dated and initialed. The evidence must clearly show that on-going assessment has taken place.

The team of verifiers saw instances where the record of work showed no evidence of one, or more, of the six PCs being overtaken yet the centre had awarded a pass for NAB D075 13/001. A common weakness was the lack of a stated aim or a coherent plan of the investigation. 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. The PCs listed for Outcome 1 are designed to assist candidates in the planning stage of their investigation; a solid foundation laid at the start of the work can greatly improve the quality of the final report. Details of experimental procedures were often very limited.

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. This PC could be overtaken by attaching a photocopy of marked pages from the first draft of the final report.

As stated in the NQ update letter (March 2006) all candidates should be issued with Advice to Candidates (pages 22-24, Chemistry Investigations D075 13/NAB 001) and the Advanced Higher Chemistry Investigation Guidance (www.sqa.org.uk).

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