

Moderation Feedback - Central

Assessment Panel:

Chemistry

Qualification area

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

Chemistry Advanced Higher Investigation

Central Moderation

General comments on central moderation activity

There was a serious concern in relation to the quality of the lab day books submitted as evidence for the AH Investigation Unit (DO75/13). A significant minority of centres moderated were aware of the requirements of O1 and O2 and had assessed the Unit in line with national standards. Other centres did not present sufficient evidence to warrant the pass assigned to their candidates.

Specific issues identified

In the majority of cases there was a lack of evidence of planning of the investigations and in these cases there was therefore insufficient evidence of Outcome 1 'Develop a plan for an investigation'.

A number of daybooks moderated did not have a 'well thumbed' look. Rather they had a "newly created" look which suggested a heavy workload was being put onto some candidates at an already busy time in the academic year.

There was little evidence of marking of the lab day books in several centres. A centre cannot simply assume each candidate has overtaken PC (a), (b) and (c) from O1 and PC (a), (b) and (c) from O2, there must be some evidence to prove the Unit has been passed. This evidence need not be extensive. A tick (initialled and dated) after each teacher/candidate discussion is sufficient. The daybook should also contain an acknowledgement of advice/contributions made by staff and other interested parties.

Only a minority of centres were fully aware of the requirements and adopted the best practice of including a checklist (similar to that shown on page 18 of the NAB document) with the PCs ticked off on the checklist and initials in the daybook which indicated on-going assessment.

Feedback to centres

The half unit DO75/13 is internally assessed (see AH Arrangements document June 2002, pages 78 to 82). NAB 001, issued July 2002, provides marking guidelines, a checklist (record of attainment) and some advice on how to choose an investigation and how to structure a daybook.

Centres must mark the day books to indicate assessment of the Outcomes and PCs. A tick (initialled and dated) after each teacher/candidate discussion is sufficient.

The daybook should, of course, be a work in progress through the year, it should be filled in regularly with a date next to each entry. Centres should ensure that candidates record the work on an on-going basis and should discourage work being rewritten neatly.

Centres should ensure that candidates are aware of the requirements for unit attainment and teachers/lecturers should use a checklist similar to that shown on page 18 of the NAB document.

The unit specifications for O1 and O2 are designed to help candidates keep a complete record of work from which to produce the externally assessed report. Setting up systems to ensure O1 and O2 are overtaken will be of great advantage to the candidate at the report writing stage.

Outcome 1 (O1)

Develop a plan for an investigation

Evidence seen at moderation showed a general lack of planning which often led to unstructured experimental work and wasted time. Guidance by class teachers at the planning stage can focus a candidate's thinking and aid final evaluation. Reassessment is to be encouraged (see page 20, DO75 13/NAB 001). Planning is a skill which must be taught and PCs (a), (b) and (c) are an attempt to help this process.

The following points might be useful as a breakdown of the planning activity.

- (1) Formulation of an initial aim to include ideas and reasons for study.
- (2) Background research; list of resources consulted noted in the daybook.
- (3) Consideration of possible options and reasons for selection of techniques/procedures.
- (4) List of techniques/procedures to be used.
- (5) Justification of experimental procedures in relation to the initial aim, eg
 - What is being measured and how?
 - Do the techniques measure what is intended?
 - What variables have to be controlled/
 - How can validity of procedures be measured?
 - What potential errors may be generated and how can they be minimised?
 - How many replicates are required?
- (6) Resources; availability, cost and source of materials and chemicals.
- (7) Risk assessments.
- (8) Timescale.

The help of teachers/lecturers should be sought as the plan takes shape and the support /suggestions given should be recorded. The daybook should show progression, i.e. evidence of modification of the plan as a result of discussions/initial experiments/unexpected results/problems encountered. There may well be further discussion and feedback with the teacher/lecturer which may lead to a revised aim and further experimentation. Help freely given, accepted and acknowledged at this stage will provide a firm foundation on which the candidate can build when they write their final, individual report.

Outcome 2 (O2)

Collect and analyse information obtained from the investigation

All raw data should be recorded accurately with correct units. As long as data is comprehensible to the reader a daybook need not be meticulously presented, first and foremost the book is a record of work done. There should be some discussion of sources of error in the procedure adopted. Reference could be made to the potential errors identified in the planning stage but a full treatment of errors is more appropriate to the final report. Similarly calculations used to check predictions are necessary in a daybook but a detailed treatment of results could be kept for the report. There is no need to duplicate work.

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