



Higher National Qualifications 2011 Internal Assessment Report

Chemistry

The purpose of this report is to provide feedback to centres on verification in Higher National Qualifications in this subject.

Higher National Units

Titles/levels of HN Units verified

General comments

In all six centres that were visited this academic year, candidates had fair access to assessment. Almost all of the centres visited had a clear and accurate understanding of the requirements of the national standards. They had correct and appropriate assessment specifications and most centres used either exemplar material or prior-verified assessments. In one visit, however, a centre was using an assessment for the Unit DX29 33: Fundamental Chemistry: An Introduction that did not cover all the mandatory Evidence Requirements. Centres need to be aware that the national standards require all the Evidence Requirements of the Units to be met by the assessments. If a centre is using internally derived assessment material it is strongly recommended that they submit the assessments for prior verification.

In all but one visit, there was sufficient evidence of candidate performance. In one visit where the Unit DH2K 34: Fundamental Chemistry theory and practice was being verified, the centre's own internal verification procedures had identified significant issues which had not been rectified by the time of the external visit and so the centre could not produce significant evidence for candidates who had completed the Unit.

In four of the six visits, there was good judgement of candidate performance with clear marking schemes being used. In these cases there was clear evidence of fair and constant marking. However, a visit to one centre uncovered errors in the marking of the theory assessment for DH2K 34 that made a pass/fail difference in one of the sampled scripts. Another visit revealed the unacceptable practice of students who had failed assessments for Outcome 1 of Unit DH2K 34 being allowed to remediate in order to find marks to allow them to achieve the 60% pass mark and thus pass. In this situation the candidates should have undertaken a full resit assessment covering all the knowledge and skills required for that Outcome.

Unit specifications, instruments of assessment and exemplification materials

In almost all centres visited, the assessors showed a high degree of familiarity with the Unit specifications and the instruments of assessment, and were familiar with the exemplification material. This has ensured the reliability of assessments and excellent standards of assessment.

In all but one visit, centres were using valid and reliable instruments of assessments that satisfied the Unit specifications. They had ensured this by using either exemplar material or having their internally devised material prior verified either internally or externally.

For practical Outcomes, marking schemes in a few centres need to be developed further so that they are sufficiently detailed for marking lab reports and errors and tolerances are dealt with in the lab reports in a way that reflects the level of the Units. It should be also noted that in a visit to one centre for lab reports for Unit DX29 33, candidates were cutting and pasting procedures from instruction sheets and not putting them in the past tense or writing them in their own words to show their understanding of them. At this level and above, lab reports are required to be in the past tense and in the students' own words.

Evidence Requirements

There was good evidence from most visits of good, clear understanding of the Evidence Requirements for the Units verified. In these centres, this ensured that the assessment instruments were appropriate, fair and reliable, and that the assessment specifications were correct.

However, one of six visits revealed an issue where one centre failed to produce assessments that adequately covered the Evidence Requirements, which resulted in the assessment being not fit for purpose. All other centres used exemplar material or had internally devised material prior verified and thus had assessments that were valid and reliable. A few centres need to improve their understanding of the way in which Evidence Requirements require that errors and tolerances should be handled. Guidelines are given in this document under 'Areas requiring further development'.

Administration of assessments

Excellent judgement of candidate performance was observed in most centres. Robust standardisation was observed to have been achieved by using comprehensive sampling for verification. In most centres, the Internal Verifiers carried out their work appropriately and fairly. Most centres implemented robust assessment strategies for missed and resit assessments. However, one centre was operating unacceptable remediation practices in allowing candidates to change answers in marked papers and another centre's internal verification system was not robust enough to identify assessments that didn't cover the mandatory Evidence Requirements.

Further general feedback

There was evidence of good and timely feedback being given to candidates. Candidates at the centres who were available for interview expressed the opinion that they were very happy with their student experience. They felt that the courses were well organised, delivered and resourced, the quality of resources (paper materials) were excellent, and access to tutors very good.

The candidates felt that the timing of assessments was appropriate and that the marking and feedback was given in a timely manner. Most centres have put in place good mechanisms to ensure all candidates had fair access to assessment, particularly for students with assessment arrangements.

Areas of good practice

During this year's visits, a number of good practice processes were identified and these are listed below:

- ◆ A cover sheet for assessments with space for assessors and Internal Verifiers' printed names and signatures, and for IV comments.
- ◆ Excellent feedback for candidates who didn't achieve. This detailed support gave the candidates information on areas that required more work before re-assessment. They also got feedback on areas of strength.
- ◆ An equality impact assessment was included in the assessment pack for the student assessment material.

- ◆ The recording of student achievement and record of work was consolidated within one easy-to-read document. This document was also subject to a number of IV checks and signatures.
- ◆ The individual student feedback form was evident for every student who had completed the assessments. Clear feedback from the tutor was evident for those students who had successfully completed their assessment and good feedback for remediation for those candidates who required to resit the assessment.

Specific areas for improvement

It is clear that some centres require to further develop the internal verification process for the chemistry Units:

- ◆ Pass marks should be stated on all instruments of assessment.
- ◆ If a group size is less than four, all scripts should be sampled for internal verification.
- ◆ Some centres should give more feedback to successful candidates.
- ◆ All centres should ensure that the evidence of which scripts have been internally verified is indicated on the script as well as on the Current list in the folder.
- ◆ Centres should ensure that there are no inconsistencies in marking. It is recommended that all borderline pass/fails are double-marked as matter of routine.
- ◆ It is suggested that each of the individual Outcomes are internally verified as they are completed and not left until the whole Unit has been completed.
- ◆ It is essential that all centres prepare a master folder for all Units containing all the required relevant documentation.
- ◆ Some centres need to review their marking schemes and assessment materials to ensure correct placement of formula subscripts.
- ◆ Some centres require to further develop their practical checklists so that they are sufficiently detailed in order to meet the Evidence Requirements.

Handling of errors

Centres should set limits for tolerances from laboratory experiments. The following were agreed as appropriate at the Chemistry EV's meeting:

- ◆ The Standards of Accuracy required for SCQF level 7 candidates are:
titrations must be concordant to 0.1 cm³ and gravimetric analysis to +/- 5%.
- ◆ Expectations of % yield for assessed practicals for SCQF level 7 candidates are:
+/- 20% of centre-defined yield. If outside range error then the candidate must be able to satisfactorily explain why.

'Sources of error' for lab reports sometimes are lacking in depth; in many cases being limited to a single word or very short statements without true evaluation. In addition, a number of candidates have not understood the distinction between random and systematic errors. It is suggested that centres work to develop the quality and depth of future candidate responses on this item.