Higher National Qualifications
Internal Assessment Report 2015
Chemistry

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

Higher National Units

General comments

Three external verification visits were carried out by the team this academic session, and the standard of assessing observed on the visits was good. Almost all of the centres visited had a clear and accurate understanding of the requirements of the national standards and had correct and appropriate assessment specifications. Most centres utilised either exemplar material or prior verified assessments.

Unit specifications, instruments of assessment and exemplification materials

In most 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 ensured the reliability of assessment in these centres and resulted in excellent standards of assessment.

In most centres visited, centres were using valid and reliable instruments of assessment that satisfied the Unit specifications by using either exemplar material or having their centre-devised materials prior verified.

In most centres visited there was good judgement of learner performance with clear marking schemes being used. In these cases there was clear evidence of fair and consistent marking.

Evidence Requirements

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

Administration of assessments

Excellent judgement of learner performance and robust standardisation was observed in most centres through 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 re-sit assessments.

General feedback

There was evidence of good and timely feedback being given to learners in most centres. Most centres have put in place good mechanisms to ensure all learners have fair access to assessment, particularly for learners with special examination requirements.

Areas of good practice

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

- Effective use of pro forma reports for the Fundamental Chemistry: An Introduction (DX29 33) Unit. These pro formas did not provide too much assistance to learners but were an effective learning tool to enable learners to progress to full laboratory report writing.
- Guidance issued to learners on handling of experimental errors was of a very high standard.

Specific areas for improvement

The External Verifiers' comments in relation to areas for improvement are included below:

- Centres should implement formal recording of ongoing internal verification discussions.
- Checklists for assessed practicals should include the level of accuracy required in the final result.
- Centres should ensure that they have alternative re-sit assessments for all Units.
- Centres should provide standard values for titrations, expected yields and other values if a product is analysed in order that errors can be commented on.
- Learners should record burette readings to two decimal places.
- Centres should ensure that each 'master folder' contains a Unit summary form that details the teaching materials and resources, accommodation requirements, equipment and assessment methodology.
- Detailed marking checklists should be used for assessments which make it clear where marks have been allocated.
- Learner scripts should be clearly annotated to make it clear where marks have been allocated.
- Centres are reminded that the Evidence Requirements section within a Unit specification carries precedence over the Guidance sections and if there is any doubt as to the requirements of a Unit specification then they should contact SQA for advice and guidance.

Handling of errors

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

- The standards of accuracy required for SCQF level 7 learners are titrations to be concordant to 0.1 cm^3 and gravimetric analysis to +/- 5%.
- Expectations of % yield for SCQF level 7 learners are +/- 20% of centre defined yield. If results are outside the error range then learners must be able

to give satisfactorily reasons, but explanations do not reflect lack of competence.

‘Sources of error’ for laboratory reports are sometimes lacking in depth: in many cases they are limited to a single word or very short statements without true evaluation. In addition, a number of learners have not understood the distinction between random and systematic errors. Centres should work with learners to develop the quality and depth of future responses on this item.