During the last four years I have implemented and all the National CfE qualifications in physics and I have the following comments to make:

1) Trying to identifying changes to unit and course documentation from the change grid at the rear of the documents is both time consuming and ‘clunky’. I have repeatedly had to check the master revisions spreadsheet, destroy and reprint unit assessments at great expense. For example, one of the recent Higher units which my pupils have just sat is sitting at version number 3.1. However, when I have sought guidance from SQA, my questions have always been promptly and fully answered. I found the SQA’s Understanding Events very helpful and would like to see this important programme re-instated.

2) The S4 pupils are over-burdened with course assignments and the same skills are being assessed multiple times across their curriculum. I have never seen so many stressed pupils in my sixteen years of teaching. The assignment instructions across the three sciences also differ for this course assessment and this only adds to the pupils’ anxieties regarding the assignments completion in the discrete sciences.

3) I am also concerned that all centres do not conduct the assignments at N5 and Higher under equitable conditions and as such they are flawed assessment instruments. I applaud the SQA’s development of pupils’ practical and investigative skills in the new qualifications framework, but my preference would be for a short paper under examination conditions that assesses the pupil’s skills of data handling, analysis and textual interpretation.

4) The streamlining of the assessment of the National 4 added value unit is to be welcomed. However, there should be a final examination for this qualification, so employers can gauge the merit of their apprenticeship applicants.

5) I have no issue with unit assessments which integrate knowledge and understanding and problem solving in what looks like an examination question, but at level C. It is good teaching to assess pupils following a unit of work and we would do this naturally over the course of an academic year to help them consolidate and link learning.

6) The distinction between different ‘types’ of problem solving in physics is very unhelpful, as many of these skills are used simultaneously when solving a problem. The recording of pupil attainment in these discrete problem solving skills (e.g. processing, selecting, analysing, predicting) at N5, Higher and AH becomes an onerous administration task which adds nothing to the teaching and learning of physics.
7) Given the shortage of programmers and coders in our U.K. workforce, I am dismayed that logic gates, op-amps and much of the electronics and applied physics which relates to ‘the world of work’ has disappeared from the certificated physics courses. Cosmology, fundamental particles and astrophysics are fascinating topics but as an engineer, turned teacher, I wonder if the content of our national courses are fit for purpose when it comes to developing Scotland’s young STEM work force.