

# LSG



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## The Learned Societies' Group on STEM Education

Fiona Robertson  
Chief Executive  
Scottish Qualifications Authority

August 2020

Dear Ms Robertson

### **SQA consultation on modifications to National 5, Higher, and Advanced Higher course assessments**

I write to you as Chair of the Learned Societies' Group on Scottish STEM (Science, Technology, Engineering and Mathematics) Education (the LSG). The LSG brings together the learned societies and professional associations to identify and promote priorities for STEM education in Scotland. The LSG comprises the: Association for Science Education; British Computer Society, The Chartered Institute for IT; Edinburgh Mathematical Society; The Institution of Engineering and Technology; Institute of Physics; Royal Society of Biology; Royal Society of Chemistry; Royal Society of Edinburgh; and the Scottish Mathematical Council. While all of these organisations are individually active in their own right and several will be making individual subject-specific submissions to this consultation, the LSG provides a forum for them to come together to discuss and take action on shared interests and concerns and so this letter is a synthesis of views common across the STEM subjects.

We were pleased to hear that SQA are consulting on proposed modifications to National 5, Higher, and Advanced Higher course assessments for 2020-21. However, given that courses have already started, there is limited opportunity to consider potential changes, especially given the importance of ensuring that any changes are communicated to the teaching profession in good time. It is unclear to us why this consultation could not have been launched earlier to provide more time to consider options and, importantly, to minimise the risk of unintended consequences.

It is difficult to predict how the COVID-19 pandemic will unfold over the coming academic year and so it is critical that Scottish Government, local authorities, schools, and SQA are prepared to be agile in order to safeguard pupils against further disruptions to their learning. We proposed a reduction in examinable course content for 2020-21 back in May 2020 in a letter to members of the Scottish

Government COVID-19 Education Recovery Group.<sup>1</sup> Recognising that schools and classrooms take different approaches to curriculum delivery, we recommended that any changes in content be consulted upon and communicated to schools as early as possible and offered our assistance in this regard. It is disappointing this proposal was not acted upon at that time as it would have allowed teachers and pupils more time to understand and adapt to any changes.

While we support in principle SQA's proposals to modify assessments, we believe the changes to STEM assessments as they currently stand are insufficient to alleviate the risks posed to pupils by additional impacts on their schooling due to COVID-19.

### ***Reduced exam length***

1. At present, there are comparatively few changes proposed for STEM assessments across National 5, Higher, and Advanced Higher, most of which involve a reduction in exam length. The rationale given for this approach is that reducing exam length is the only way of easing pressure on pupils while preserving the credibility of the exam. While the proposed changes may slightly reduce the burden of exams on the day, they will have little material impact on the amount of classroom time required to adequately prepare pupils, leaving them vulnerable to the compounded impacts of potential additional school closures.
2. While the reasoned removal of exam content would have been our preferred option, it may realistically be too late to implement additional reductions beyond those that are currently proposed and which we have already described as being inadequate. Therefore, an alternative might be to allow greater question optionality under acceptable categories. We note that this approach is being proposed for other subjects, including the social sciences.
3. It bears considering that a pupil enrolled in courses with significantly modified assessments might have an advantage over one facing less modified assessments, due to a reduced study load and other factors.

### ***Flexibility***

4. As stated, additional lockdowns in response to COVID-19 could be enacted. While this could occur on a national scale, the recent situation in Aberdeen suggests there is a distinct possibility that further lockdowns are more likely to be localised in nature. Additionally, emerging data indicates that deprived areas could be at greater risk of further outbreaks and subsequent lockdowns. Such sporadic lockdowns could create a situation where some schools experience further suspensions to in-classroom instruction while others are permitted to continue operating as normal, leaving students differentially prepared to sit uniform national exams. These impacts are likely to be more acutely felt in disadvantaged communities where home learning is a particularly poor substitute for being in school. Changes in exam delivery under exceptional circumstances are already provided for under current SQA practice. A scaled-up version of this approach should apply in cases of local lockdowns to ensure pupil attainment is fairly evaluated, regardless of any disruptions they may have experienced. Should a national lockdown be reinstated, a more comprehensive contingency plan would be required that should again be based on principles of fairness and the mitigation of disadvantage.
5. The outcome of the 2020 alternative assessment model suggests that relying solely on teacher judgment - coupled with moderation - does not always yield an accurate measure of student attainment. While teacher professional judgment serves as a valuable indicator, it should be

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<sup>1</sup> <https://www.rse.org.uk/wp-content/uploads/2020/05/LSG-letter-COVID-19-and-examinable-content.pdf>

corroborated by objective evidence to provide a more well-rounded account of a pupil's performance. It will be important to collate such evidence at regular intervals so that pupils have a running marker of their achievement, given that further lockdowns could occur at any point in the school year.

6. We recognise that there can be a reluctance to impose too many changes on STEM assessments for fear of compromising integrity. STEM subjects tend to be heavy in content and often feature inherently interconnected concepts that can make the rationalisation of assessments more challenging. However, this should not preclude a reconsideration of the current approach to assessments within STEM subjects to ensure that they prioritise core concepts and skills while also making reasonable allowances for variations in instruction and learning.

### *Assignments*

7. STEM courses are not heavily modularised, making it more difficult to retrofit changes in examinable content once course delivery has already commenced. It might therefore be more pragmatic to consider modifications to the assignment component of courses. Pupils will not have begun work on their assignments at the outset of the academic year and so it is still early enough for changes to be feasibly enacted with minimal disruption.
8. The LSG has previously commented on the questionable value of the current approach to the assignments, stating that they do not always provide a meaningful gauge of student attainment, nor are they necessarily the most effective way of giving learners practical experience.<sup>2</sup> It would be entirely possible for teachers to assess pupils' practical skills without the need for an assignment. The assignments require a significant investment of staff and pupil time that could arguably be spent on more effective teaching and learning activities. As such, it could be recommended that assignments be shortened, rationalised, or removed altogether. However, it is important to emphasise that the alteration or removal of assignments would not necessarily be appropriate across all STEM subjects and so should be considered on a case-by-case basis to avoid unintended consequences. For example, in Computing Science, assignments are regarded as being fundamental to meeting the aims of the course. Further, some pupils naturally perform better in the context of an assignment and so removing them runs the risk of adversely impacting on some candidates' progression in the subject.
9. In general, we would wish to see a commitment to ensuring practical laboratory work is delivered and supported in the 2020-21 academic year as far as possible while still observing prevailing health and safety guidelines. Practical work is a vital part of a STEM education and while some concessions must understandably be made under the current circumstances, it is crucial that this year's cohort of students does not miss out on opportunities to develop these skills.

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<sup>2</sup> [https://www.rse.org.uk/wp-content/uploads/2017/04/LSG\\_Sciences\\_Assignment.pdf](https://www.rse.org.uk/wp-content/uploads/2017/04/LSG_Sciences_Assignment.pdf)

I hope that the above has been useful in setting out the LSG's position on SQA's proposals for modifications to National 5, Higher, and Advanced Higher course assessments for 2020-21. We would be pleased to discuss our response further should you consider that productive. To follow up, please contact the LSG's secretary, Daria Tuhtar, [dtuhtar@therse.org.uk](mailto:dtuhtar@therse.org.uk), 0131 240 5006.

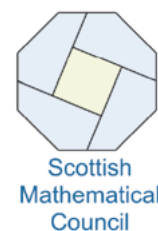
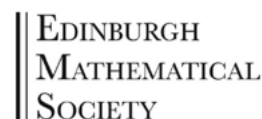
Yours sincerely,



Professor Maggie Cusack FRSE  
Chair of the Learned Societies' Group

CC Sue Pope, Head of Service: Qualifications Development, SQA

Dr Gill Stewart, Director of Qualifications Development, SQA



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