

Improving Assessment in National Courses Research: Advanced Higher Biology

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Proposal

The following proposal was shared with respondents who said they had studied or taught Advanced Higher Biology:

- We are proposing making the exam for Advanced Higher Biology shorter, reducing the time from 3 hours to 2 hours 30 minutes.
- We would shorten Section 1 by removing five multiple choice questions. We would shorten Section 2 by removing 15 marks' worth of questions. The proposed changes to the question paper include an additional large extended-response question and the removal of the short extended-response question.
- The proposed weightings of the exam and the project would change slightly to 70% and 30%.
- We are proposing these changes to improve the exam experience for learners and for schools, while maintaining appropriate sampling of subject content.

There are no proposed changes, other than weighting, to the project at this stage.

The proposed changes for Advanced Higher Biology are:

Component	Current marks	Current duration	Current weighting
Section 1 + 2	20 + 80	3 hours	75%
Project	30		25%

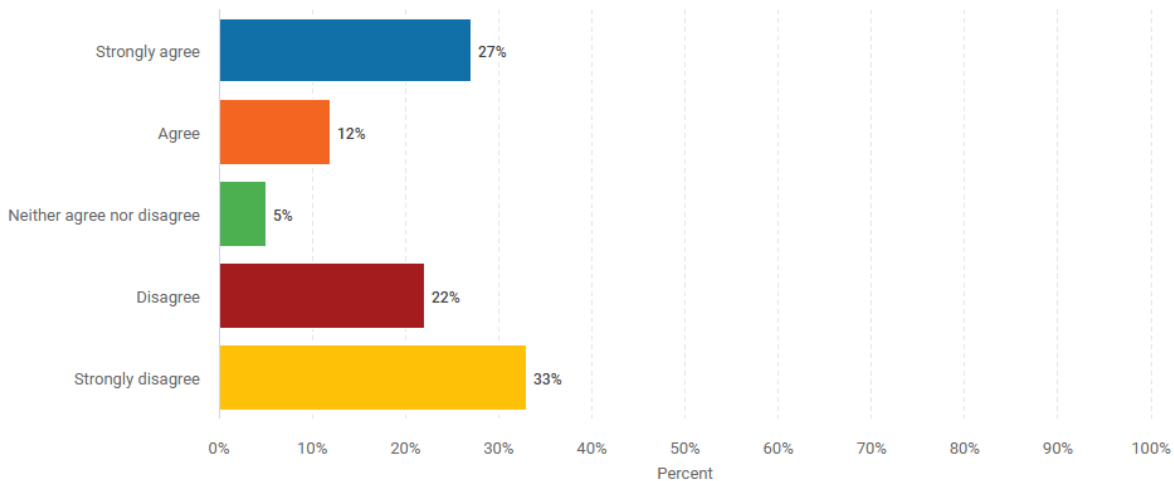
Component	Proposed marks	Proposed duration	Proposed weighting
Section 1 + 2	15 + 65	2 hours 30 minutes	70%
			30%

Findings: learners

We received responses from 81 learners who said they had studied Advanced Higher Biology. As shown in Figure 1, the majority of learner respondents (55%) disagreed or strongly disagreed with this proposal, while 39% agreed or strongly agreed.

Figure 1: To what extent do you agree or disagree with the proposed changes for Advanced Higher Biology? Learner views

To what extent do you agree or disagree with the proposed changes for Advanced Higher Biology?

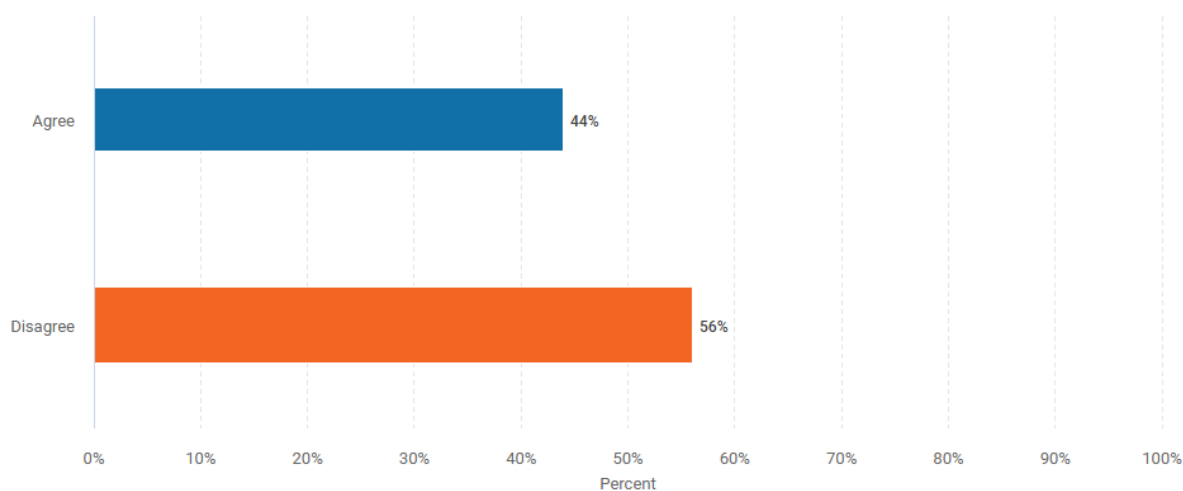


Base: 81 learners who said they had studied Advanced Higher Biology

Respondents were also asked to what extent they agreed with the decision to begin the proposed change in 2026–27, should the change be made. As shown in Figure 2, the majority of learners (56%) disagreed or strongly disagreed that the change should be made from the 2026–27 session, while 44% agreed or strongly agreed.

Figure 2: In the event that the proposed changes are made for Advanced Higher Biology, do you agree or disagree that this should happen from session 2026–27? Learner views

In the event that the proposed changes are made for Advanced Higher Biology, do you agree or disagree that this should happen from session 2026/27?



Base: 81 learners who said they had studied Advanced Higher biology

Qualitative analysis

Learner respondents were asked if they had any further comments that they would like to share about the proposed changes to Advanced Higher Biology. Twenty-two respondents left a comment. While just under half (44%) of respondents agreed or strongly agreed with the proposal, almost all comments were from those who disagreed with the proposed changes.

Challenges with implementing this change

The vast majority of comments from learner respondents expressed concerns with the changes being proposed to Advanced Higher Biology. The key challenges perceived by learners were that they would be penalised by increasing the project weighting, as this was felt to be the most difficult aspect of the course, and that the course would not be sufficiently sampled by reducing the number of marks in the question paper.

Challenges with increasing the project weighting

It was common for respondents to say that the project was the most challenging aspect of the Advanced Higher Biology assessment and that increasing the weighting of this would penalise learners, who, it was felt, find it easier to pick up marks in the exam component. Some learners also said that increasing the weighting of the project would result in more pressure throughout the year to get a better grade so that they were not penalised by the higher weighting.

‘I feel that adding extra weighting to the project negatively impacts students, as it puts extra pressure on them throughout the year.’

‘The project is very difficult and hard to gain marks. We perform better in the exam.’

Related to this was the sense that some centres lacked the resources, either through staffing or equipment, to allow learners the ability to perform well in the project. These respondents felt that learners in these centres would be unfairly penalised through the increased project weighting, leading to inequity among candidates.

‘I come from a school in a deprived area with low progression rates into university. For the project we do not have access to lots of equipment or equipment that is broken. This greatly impacts and limits the types of projects we can do. By making the project worth more this will make it harder for us to achieve good grades.’

‘Weighting the project more heavily would be disadvantageous for many students. I’m lucky to have a school where the teachers have marked for projects in the past and are determined to support us but there are so many people out there who teach themselves Advanced Higher because there aren’t any teachers for it and they don’t have as much support!’

However, one respondent who agreed with the proposal commented that increasing the project’s weighting would be beneficial, as they felt the project more accurately reflected what would be expected of them in a real work environment, and university assignments.

Challenges with reducing the number of marks

Another recurring theme among Advanced Higher Biology learner respondents was the opinion that reducing the number of marks would mean that the course content would not be sufficiently sampled. Some learner respondents perceived that the current number of marks was already not enough to account for the large amount of course content, so they felt that reducing it further could impact the validity of the exam.

‘This course has far more specified content than both N5 and Higher Biology — why the exam is being shortened to just 80 marks therefore makes very little sense to me. The proportion of content sampled will be very small — the validity of this exam in testing the subject as a whole comes into question.’

Some also expressed that the proposed number of marks in relation to the proposed time for the exam would not be fair.

Less common themes related to challenges with the proposals

There were some ideas expressed by a minority of learner respondents about why they disagreed with the proposed changes to Advanced Higher Biology. These were:

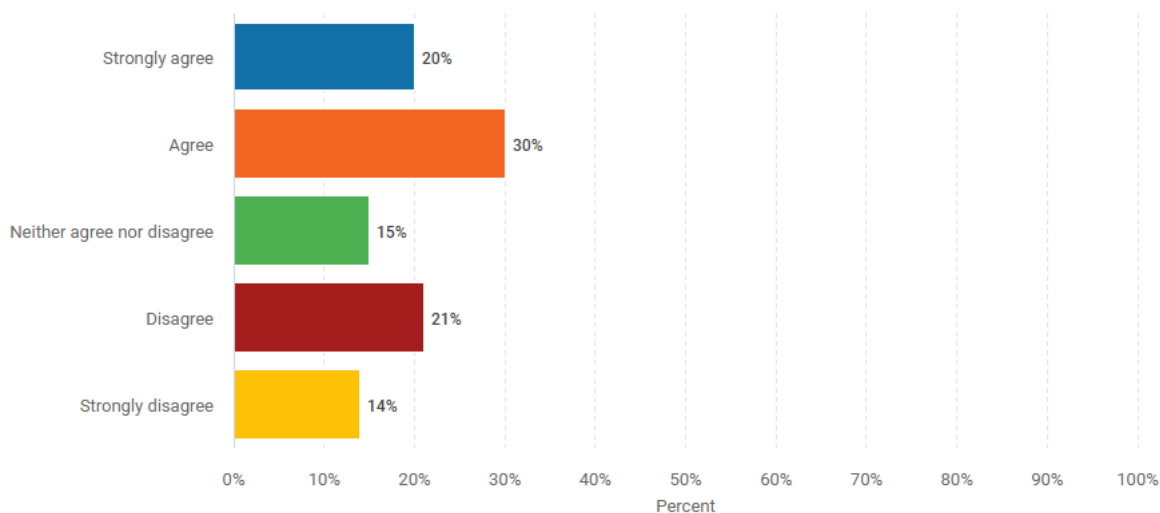
- The exam should be split into two separate papers
- Increasing the weighting of the project would make the course inconsistent with Advanced Higher Chemistry and Physics
- The project weighting should be reduced from 25% to 20%

Findings: educators

We received responses from 320 educators who stated they had taught Advanced Higher Biology. As shown in Figure 3, half (50%) of educator respondents agreed or strongly agreed with the proposed changes for Advanced Higher Biology, while 35% disagreed or strongly disagreed.

Figure 3: To what extent do you agree or disagree with the proposed changes for Advanced Higher Biology? Educator views

To what extent do you agree or disagree with the proposed changes for Advanced Higher Biology?

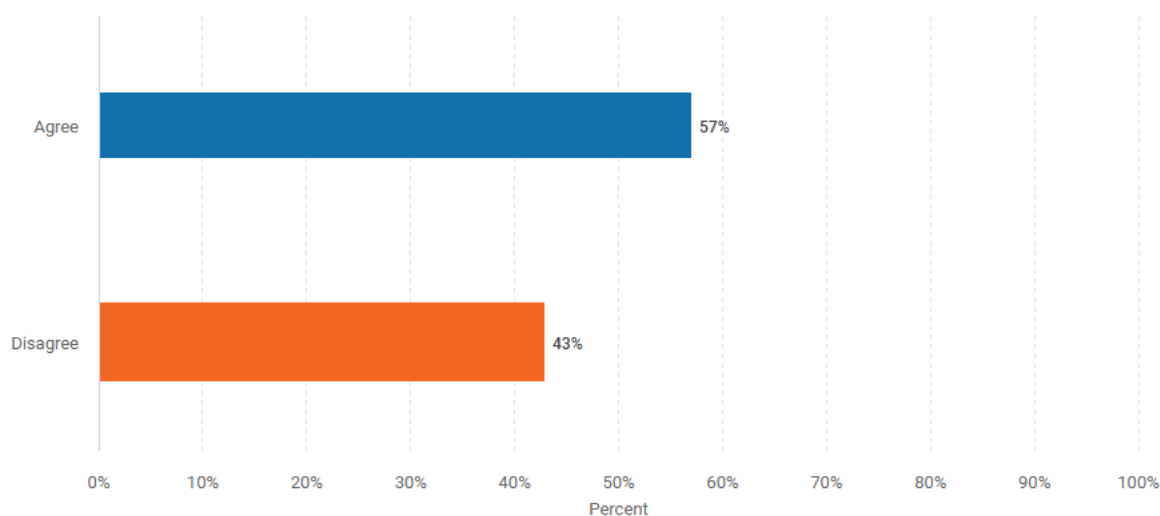


Base: 320 educators who stated that they taught Advanced Higher Biology

As shown in Figure 4, 57% of educator respondents agreed and 43% disagreed that if the proposed changes went ahead, they should be implemented from the 2026–27 session.

Figure 4: In the event that the proposed changes are made for Advanced Higher Biology, do you agree or disagree that this should happen from session 2026–27? Educator views

In the event that the proposed changes are made for Advanced Higher Biology, do you agree or disagree that this should happen from session 2026/27?



Base: 317 educators who stated that they taught Advanced Higher Biology

Qualitative analysis

Educator respondents were asked if they had any further comments they would like to share with us, and 154 respondents left a comment. Although the most common response from educator respondents was to agree with the proposals, the vast majority of comments were from respondents who disagreed with the proposed changes, explaining their reasoning.

Similarly to learner respondents, the most common theme that emerged from the open-text responses from educator respondents was related to disagreeing with increasing the weighting of the project due to the perceived difficulty of this aspect of the course, and the amount of time and resources that educators had to give to delivering it.

Benefits of implementing this change

There were a number of comments from educator respondents related to the benefits of implementing the proposed changes. The key themes that emerged from the data were that increasing the project weighting would represent better the volume of work that went into this part of the assessment, and that the introduction of extended response questions would better prepare learners for university exams.

Benefits of increasing the project weighting

It was common for participants who agreed with the proposals to say that increasing the project weighting would better reflect the hard work and time that learners put into this aspect of the assessment. Some said that this change was long-awaited, and a positive step for Qualifications Scotland. One respondent also said that the project was a big step up in difficulty from National 5 and Higher and that increasing the weighting would account for this.

‘This is a much needed change in AH. The amount of work required by candidates to do the project is not reflected in the 25% so I am very much in favour of this being increased to 30%.’

‘This new weighting better reflects the time and effort learners put into their projects.’

Another benefit of increasing the project weighting, as perceived by educator respondents, was that the project reflected a more holistic approach to assessment. Because of this, some respondents felt that placing greater emphasis on the project represented a step in the right direction, away from reliance on a high-stakes exam.

‘It is good to see movement away from the weighting of 'one day matters more'. The project is a major part of what pupils do and they should be rewarded for it.’

On the other hand, while some expressed agreement with increasing the project weighting, they said they would only do so if they received more support from Qualifications Scotland in terms of how to deliver and assess the projects. For example, some respondents asked for events to help those delivering the projects, and updated and more in-depth guidance in Understanding Standards materials. Specifically, one respondent requested more examples and commentary that covered all sections of the project.

‘Happy with the proposal to give the project greater weighting but would like to see more support events aimed at helping those deliver projects for the first time.’

‘The proposed changes to the weighting of the exam and project must result in further supporting documents for the project in addition to the recently updated guidance for candidates. With the 2025 average project score of 22.3 out of 40 nationally, this shows that current materials are not adequate to allow teachers to effectively prepare candidates.’

Benefits of changes to the question paper

There were a number of comments from educator respondents who said that the introduction of an extended-response question would help prepare learners for university, where a similar style of exam question would be utilised. Some respondents explained further that these types of questions would enable high-order thinking skills and application of knowledge, similar to what

would be expected at university. However, one respondent who agreed with the introduction of an extended-response question for these reasons, also expressed concern that the course may not be sufficiently sampled through this approach.

‘Agree with these proposed changes and that a longer extended response question would bring the exam more in line with what pupils have come to expect at higher level (I believe it encourages greater depth of learning from pupils which benefits their understanding overall.)’

‘Similar to my other comments I am slightly concerned about how the questions will effectively assess the entire course, but the changes otherwise are brilliant. Changing to two long ERQ [Extended-Response Questions] is aligning better with a University approach which I am in favour of.’

Another theme that emerged related to the proposed changes to the question paper was that the reduced time of the exam would benefit learners who find the current three-hour exam challenging. Some respondents also noted that learners who have extra time as part of additional assessment arrangements would particularly benefit from this change.

‘3 hours exam does impact on students, especially AAA [Additional Assessment Arrangements] candidates. I have always felt that the timings for Advanced Higher Biology were too onerous for young people. Two hours thirty is a more reasonable time frame.’

‘The shorter exam would be preferable as pupils with extra time can be sitting for over 4 hours.’

However, one respondent said that while they agreed that reducing the exam length would benefit learners with additional time, they were concerned about its ability to prepare learners for tertiary education.

Challenges with implementing this change

The vast majority of comments from educator respondents expressed concerns with the changes being proposed to Advanced Higher Biology. The key challenges that educators perceived with these proposals were that increasing the project weighting would penalise learners and put more pressure on educators due to its difficulty and complexity, and that there was inequity between centres in the support they could offer learners with the project. Further key concerns were that the course content would not be sufficiently sampled by the reduction of marks, and that it was difficult for learners to achieve marks in the project unless there was a marker in the department, which they felt would again disadvantage learners by increasing the weighting.

Challenges with increasing the project weighting

Similarly to learner respondents, the most common challenges expressed by educator respondents were related to the proposed increase to the project weighting. There were many respondents who explained that the project was the most difficult part of the Advanced Higher Biology assessment, and it came across strongly in the data that they felt that increasing the weighting would penalise learners and impact on results. For example, many respondents cited that it was very rare for learners to achieve high marks in the project, while others stated that it represented a large jump from Higher and National 5 that learners struggled to adjust to.

‘I don't think the weighting should be increased for the project, candidates find this really challenging and can massively impact their grade as it is. I feel like this could penalise too many pupils.’

‘So few students currently score above 20/30 for the project that I would be horrified if the weighting of the project was increased.’

‘Increasing the project weighting when pupils are already struggling with the assignment at N5 and Higher, I don't believe is the answer and will disadvantage pupils.’

It was also very common for educator respondents to say that the burden the project imposed on centres would become even more challenging if educators felt pressure to put more time into the project due to increased weighting. In relation to this, many educator respondents felt that the level of support, time and resources, including equipment, that different centres had to give to the project was not equal, which could unfairly impact learners depending on which centre they were coming from. For some, this inequity was linked to deprivation where they felt that learners in more disadvantaged areas had access to less resources, such as IT, scientific equipment or financial support.

‘Increasing the weighting in favour of the project, when there is little or no time in the course to prepare candidates for development of the skills they require for the project, will disadvantage many students who do not have adequate access to time, resources or support. I agree to the shortened paper but not to increasing the weight of the assignment to 30%. I feel that our students are disadvantaged in the assignment due to a lack of budget for chemicals, equipment, field trips. They have to complete very basic assignments, often with inadequate equipment.’

‘Advanced Higher projects are expensive, time consuming and stressful already. Increasing the weighting of this will increase these factors for both pupils and teachers’

‘All local authority schools I have taught in do not give enough time to AH Biology classes (compared to independent schools I have taught in), and pupils struggle to access the required skills needed for a successful project. Again, this significantly disadvantages learners who are already disadvantaged, as they are less likely to have

the opportunities (financial or otherwise) to access experiences which would help them achieve well in the project. [...] It is hugely unfair and does not improve equity or lessen the poverty-related attainment gap'

Further to this, there was also the concern among several respondents that more time would need to be spent on the project because of the increased weighting, but that this would not be offset by a reduction in course content. It was therefore perceived by respondents that this change would result in more work for educators.

'[...] if it is a higher weighting then the tendency will be to spend even more time on it, thus reducing time available for us to teach the content. This is already a constraint as the content, plus developing their data analysis skills and the techniques for a totally different style of question paper, takes all the time we are allocated on the timetable. Content in all Biology courses is known to be excessive, or at least higher than for many other subjects and it is already a struggle for both candidates and teachers alike.'

'We are already struggling to deliver the content, and help support pupils as they complete their project, in the time we have. Will the subject content be updated at any point to reflect this?'

A final major theme among respondents who disagreed with increasing the project weighting was connected to marking. It was common for educator respondents to say that it was difficult for learners to achieve marks in the project unless there was an appointee, or marker, in the department. There were also a few comments that expressed confusion at how high marks were to be achieved in the project. Again, this theme was linked to creating inequality between learners in different centres in terms of attainment. Several stated that if the project weighting was to be increased, then better support should be given to educators in the form of more detailed guidance and marking instructions, and more Understanding Standards events. Some also suggested that offering a prescribed list of project aims for learners would be useful and would reduce the burden on educators.

'There needs to be clearer guidelines on the AH project. Marking scheme is too ambiguous and teachers who have marked for SQA have a significant advantage in supporting young people. Project should be either smaller and weighted less, or clearer guidelines and instructions given to staff.'

'The projects are very challenging for pupils to achieve well in [...] and the increase in the weighting of this unfairly disadvantages pupils. The lack of clarity and examples of good projects means that schools who want to improve attainment in projects cannot unless they have SQA markers.'

'The project for AH should not be worth more than what it is due the inconsistency of the marking and the guidelines. Pupils will be more disadvantaged than what they already

are. We have excellent pupils who follow all the guidelines and instructions of projects who can just get a 50% of the marks for it [...].’

There were also some concerns regarding the increased weighting of the project that a minority of respondents spoke about. These were:

- It is difficult to identify the use of Artificial Intelligence in assessment methods like the project so increasing the weighting only exacerbates this problem
- The project in Advanced Higher Biology should be the same weighting as projects in Advanced Higher Chemistry and Advanced Higher Physics

Challenges related to reducing the length of the question paper

Another overarching theme that emerged from the data was related to challenges associated with reducing the length of the question paper, although there were far fewer comments on this topic than on the project weighting.

Similarly to learners, educator respondents expressed concerns that reducing the length of the question paper from three hours to two hours and 30 minutes would mean that the course content was not sufficiently sampled. It was perceived this could result in disadvantaging some learners by leaving the assessment up to luck if learners had only revised some of the content. On the other hand, some felt it was unfair if learners had learned the whole course but were only able to demonstrate their knowledge on a reduced number of topics in the exam.

‘Removing content may weaken the strength of the exam as it limits the ability to assess knowledge from all topics.’

‘There is already too much of the course specifications for the student, that is not asked in the final exam. By removing more marks from the final exam, it will make the final exam more chance than skill and applying knowledge.’

Some educator respondents also had concerns that reducing the length of the question paper would make the exam too easy. They felt that learners who studied Advanced Higher Biology tended to be very academic and would be moving on to university, often to study medicine, and that they should be challenged enough to prepare them for this level of academia.

‘Many students studying Advanced Higher Biology are very academic, looking to go onto medical fields, [so] why should the challenge be reduced. This course prepares them for their first year of university, they should be challenged appropriately.’

‘I feel a 3hr exam is appropriate for AH students — many of them will be preparing to go to university and the longer exam will help with this.’

On the other hand, a few respondents felt that reducing the length of the paper to two hours and 30 minutes, while only removing 20 marks, would make the exam too difficult. These respondents said that learners would not have enough time to complete the paper and check their answers over at the end. One respondent specifically mentioned that learners would need more time to read the scientific article in section two of the paper.

‘Most AH Biology students require the full 3 hours to complete the current paper, I don't feel we would know if shortening the time and changing the question content structure will work until it is tested.’

‘I am concerned that you are proposing to remove just 20 marks but 30 minutes from the exam: my experience is that most pupils have little time to check over the exam once they are finished at present.’

Challenges related to changing the type of questions in the question paper

A minor theme that came out of the analysis was concerns about removing the short-response question and adding a large extended-response question. Some respondents perceived the large extended-response question to be more challenging and that it changed the focus from assessing knowledge to assessing skills like essay writing and analysis. Because of this, it was felt that this made the question paper harder as it was then more difficult for some learners to pick up knowledge marks.

‘Two extended responses and less marks available in short answer questions would narrow the scope of the exam considerably. This would be to its detriment as pupils are assessed on less content while still having to cover all content. Skills in essay writing would then be significant in measuring success.’

‘A large proportion of the AH exam is problem solving based, instead of assessing core course content. By reducing the total number of marks to 80, I fear the number of 'knowledge' marks will be reduced, therefore favouring pupils who are naturally more analytically minded over those who have worked hard to understand course ideas. I presume this is why another large extended answer is being introduced.’

Others expressed that the addition of a large extended-response question would mean that learners would need to know the whole course content in-depth in order to gain marks, compared to being able to answer questions on different topics to gain marks in the short extended-response questions.

‘Removing the short extended response and adding an addition longer one again puts learners at a disadvantage as they will have to know the entire course in full depth to access the longer extended response marks, whereas the shorter one allows us to

assess their knowledge of more topics and make it easier for pupils to gain marks on topics at a lower depth of knowledge, vs a few topics at great depth.'

There were a few comments that suggested that by making these changes to the questions, section two of the paper would be more heavily weighted than previously. There was a concern among these respondents that this could negatively impact some learners' grades.

'Candidates have also performed better in section 1 than section 2. Therefore decreasing the marks for section 1 will have a knock on affect to attainment.'

'Adding in an additional large extended response whilst reducing the content of the exam by 20 marks will increase the weighting of the large extended responses. This will be detrimental to learners as, if they lack depth in only the 2 areas of the course which are assessed by the large extended responses, their mark will be affected enormously.'

Challenges related to implementing the changes from 2026–27

While the majority (57%) of educator respondents agreed that the proposed changes should be implemented from the 2026–27 session, some educator respondents felt that they would need more time to adjust to the changes. A few respondents explained that more time would be needed to write new prelims. Others indicated that learning materials would need to be updated to reflect the changes, which would require more time, especially with courses starting in June 2026.

'New prelims will need to be developed that meet the new criteria. This is not possible by 2026 academic year.'

'Any changes to the exam structure must be fully implemented in advance of the start of the next academic session. By academic session I refer to the start of the new timetables in school which happens at the close of the 2026 exam diet. Teachers and learners must have time to fully digest any changes and plan for the implication of these changes in advance of starting teaching a new cohort of learners.'

Alternative suggestions

Some educator and learner respondents used the free text box to give varying suggestions for alternative changes that they felt should be made to Advanced Higher Biology. We haven't included these comments in the analysis, as they did not directly answer the research questions and were out of scope of this research. We passed the comments on to our Qualifications Development teams to make them aware of the themes that emerged on this topic. We'll consider alternative changes to National Courses as part of wider qualifications reform in the future, and learners and educators will have opportunities to share their views and input more directly to this work.