

Predicting Predictability: A briefing paper

Research findings relevant to predictability in examinations in 2021

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Due to the coronavirus (COVID19) pandemic, students sitting examinations in summer 2021 will have studied variable amounts of the curriculum. Some stakeholders have suggested that, to be fair to all students, changes should be made to the examination papers, to ensure that, no matter what subject content students have covered, they should be able to find questions they can answer.

The purpose of this publication

This publication is about the potential impact on students of making changes to examination papers. It outlines one of the many considerations around examinations in summer 2021, that of the extent of teacher and student familiarity with the format of examinations. It draws on our recent piece of work, “Predicting predictability: Investigating question paper predictability and the factors that influence this through a question prediction exercise” ([Holmes, Khan, Zanini & Black, 2020](#)).

Summer 2021 examinations

Some level of predictability is important to valid assessment. If students know the form that the assessment will take, they can better prepare for it and so be less anxious and more confident. While some test anxiety can be beneficial and can improve performance, too much can lead to distress and reduce test performance.

Predicting Predictability

In the report “[Predicting Predictability: Investigating question paper predictability and the factors that influence this through a question prediction exercise](#)”, Holmes, Khan, Zanini & Black identify 26 factors that teachers used to inform their predictions about future examinations. These cover factors related to the appearance of questions/topics on past papers, the content in the specification document, the appropriateness of the topic for the type of question, the logic of the papers, the age of the specification and other resources (for example, textbooks). In their empirical work, they found that the most important factor was ‘questions on past papers.’

They used the factors to develop and trial a methodology to support estimating the predictability of examinations, in which teachers predicted future examination questions and their predictions were checked against the actual papers. Around a quarter of predictions were accurate. While the study drew on a range of subjects, they note, however, it was a small sample of subjects and so the outcomes of this part of the work need to be treated with some caution.

Holmes, Khan, Zanini & Black make clear that examinations need to have a sufficient amount of predictability and their distinction between ‘good’ and ‘bad’ predictability is particularly relevant to summer 2021 examinations.

‘Bad’ and ‘good’ predictability

‘Bad’ predictability is when qualifications are structured in such a way that teachers and students can work out, pretty reliably, what the questions on a future examination paper are going to be about. Holmes, Khan, Zanini & Black identified features, such as the non-appearance of a particular topic in recent previous papers

making it more likely that this topic would come up on a future paper, which were examples of 'bad' predictability.

This predictability is harmful for a number of reasons. Highly predictable papers can, for example, encourage students to rote-learn the answers to expected questions, so make the examination a test of memory rather than of the specific subject. This is not good for students, because it risks undermining real learning and reducing it to memorisation, which is a much less engaging experience. Further, it can reduce the predictive validity of grades, because students can be good at memorising, but not actually good at the subject. A student might get a good grade in a subject with a predictable exam, so choose to continue studying that subject further, and then realise they have made a mistake.

Predictability is not always negative and some level of familiarity or predictability is 'good'. Both teachers and students need to know what is expected of them for students to perform at their best. Whether students have to answer multiple-choice questions or write an essay needs to be known so that they can prepare. Some aspects of predictability add validity to an assessment because students can demonstrate their knowledge and understanding without being distracted by surface features of the questions and anxiety is less likely to get in the way.

Changes to examination papers for summer 2021 and 'good' predictability

By summer 2021, students will have studied variable amounts of specification content. It has been suggested that two broad strategies might be used to ensure fairness to all students:

1. Introducing/increasing optionality
2. Changing the kinds of questions asked

Introducing/increasing optionality

We have [research findings on the impact of optionality on fairness to students](#). Now we look at the impact of the changes to the format of the question paper that introducing/increasing optionality would require.

In an examination, we must ensure that we are testing students' subject knowledge and skills. Introducing/increasing optionality would require a change in the format of the question papers, with students needing to know which sections of the paper are relevant for them, how many questions they need to answer and which combinations of questions are allowed. This could pose a threat to validity, because students who are good at a subject might well under-achieve because they misunderstand complex instructions or cannot navigate their way through an unfamiliar paper.

For examinations that currently have optionality, we know that teachers put a lot of effort into ensuring that their students know what to do in the examination. Every year, though, there are students who make mistakes, such as attempting the wrong questions, or the wrong combination of questions. Sadly, this can impact on their final grade. Introducing optionality into examinations which do not currently have it would need careful consideration.

Changing the kinds of questions asked

Before considering this in detail, our research identified a high-level challenge to this suggestion.

When examination boards developed their qualifications, they took great care to align the specification content and the assessments. The tasks they ask students to do – the kinds of questions asked and the mark schemes used – reflected the particular kinds of knowledge and skills valued in the subject. Changing the types of questions asked – and probably the mark schemes too – could result in an examination which does not do this so well, which would impact validity. Under the circumstances, of course, some changes might be the right thing to do, because they help students.

Turning to the specific suggestions made, some have suggested that higher-tariff questions should be replaced by a larger number of multiple choice questions. This would enable broader sampling across the subject domain, so give students a better chance of finding questions on topics they had covered.

It has also been suggested that higher-tariff questions could still be used, but they should be as 'open' as possible. So, for example, instead of specifying a particular context in a question, it should be open to students to use whichever context they had been taught. Alternatively, examination boards could ask questions where the student has to apply what they know to context or material which is not in the specification. In this way, it is suggested that no student would be disadvantaged.

Our research suggests that both of these approaches would need to be used with care so as not to risk undermining 'good' predictability and inadvertently disadvantaging students. Students perform best when the style of questions in the examination is sufficiently familiar that they do not need to spend time working out precisely what the question is asking them to do. This is why teachers use questions from past papers for classroom teaching and why, in the lead up to the examination, past papers are an important aid for students.

Multiple-choice questions raise a number of issues. They can, for example, increase the reading demand of the examination, penalising students who are good at the subject, but slower readers. If they have been used with the expectation that students will only be able to answer some of them, we risk penalising students who are less able to identify quickly those questions they can answer and waste time on those they cannot.

Introducing more open questions can be problematic too. If they are (or appear to students to be) substantially different from the questions that the students are used to answering, our research indicates there is a risk that students will not be able to understand the questions at all, or might misunderstand them and respond inappropriately. We could try to make them as similar as possible to the questions students are used to answering, but research tells us that even slightly unusual (although perfectly valid) questions can have a major impact on student performance. Were we to use high quality questions, designed to ensure that students could answer using a range of content, there would be a risk that these questions would not have the positive effect on students that we intended them to have.

For any kind of change, our research indicates we need to be very careful about

asking students to do something in an examination which they were not expecting, or had not been sufficiently taught. If this happened, the examination could end up being more a test of general ability or intelligence (or adaptivity) but perhaps not a fair or valid assessment of a particular subject. If there are changes, we need to ensure that we do not make the examinations so unfamiliar to students that it makes them anxious, or the examination ends up being so inaccessible for them that they cannot demonstrate their knowledge and skills.

Conclusion

Ofqual recognises the concerns of stakeholders and their desire to ensure fairness to students in summer 2021. Making changes to the format of examinations, or to the ways in which we ask questions might seem an obvious solution to the challenges faced in designing assessments which are fair for students whose learning has been disrupted by the coronavirus (COVID19) pandemic, but it is important to take account of the risks that doing so might pose. Our research suggests that a key risk is the removal of 'good' predictability in the examination, which might well disadvantage the students we are trying to help.

Our research findings confirm those of previous work. Were changes to be made to the format of examinations or the ways in which questions were asked, we would need to make these changes carefully. We would need to make sure that we balanced ensuring that students who had studied variable content could access the examination with keeping the papers sufficiently familiar so that students could deal with them confidently in the examination.



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