A Qualified Disaster: Allocating Student Grades During Covid-19

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In England, many students sit national examinations when they are aged 16 and 18. These are called General Certificates of Secondary Education (GCSEs) and Advanced Level qualifications (A Levels). Each set of examinations occurs over a period of about four weeks towards the end of the academic year, and opportunities to re-sit after this time are rare. The average student will take eight or nine GCSE and three A Level, or equivalent, qualifications.[1] For each qualification, students will sit the same examination papers at the same times across the country. The papers are then marked externally and a national regulatory body sets grade boundaries to ensure that the distribution of grades is comparable across years. The grades that students receive have significant long-term consequences; students are admitted for A Levels and for skilled vocational training based on their GCSE grades, and GCSE and predicted A Level (or equivalent) grades are used by universities and entry-level employers to evaluate applicants.[2] The aggregate grades of a school cohort also determine that school's place in national league tables and their likely enrolment – and therefore funding – for the subsequent year.

GCSE and A Level examinations were cancelled in both 2020 and 2021 due to the Covid-19 pandemic. Policymakers were tasked with finding another way to assign student grades.

This was a high stakes policy issue because GCSE, A Level, and equivalent grades have significant currency in the UK context. First, they signal meaningful student achievement, allowing education and employment providers to compare applicants from different schools and backgrounds across a common scale. Second, they retain their value over time, allowing students to earn qualifications that they can take pride in and use in later life. Third, they serve as an important accountability mechanism, providing a means to track school-level performance and offer both families and the state insight into how well particular schools prepare their students academically.

The challenge facing policymakers in 2020 and 2021, therefore, was to somehow ensure that student grades were still perceived as robust and precise by a multitude of stakeholders.

The solution was not obvious. One difficulty was the fact that most GCSE and A Level grades had previously been awarded through end-of-course examinations only, meaning that students did not have marks from individual modules which could be used as a proxy or even a guide. A second

[1] Students may also choose to study one or more Business and Technology Education Council (BTec) qualifications, which are equivalent to GCSEs or A Levels have a greater focus on practical, vocational skills.

[2] For example, students who are just a few marks short of a pass in their English GCSE are about nine percentage points less likely to enrol in A Levels and four percentage points more likely to drop out of education entirely by age 18 than they would be had they just scraped through. Machin, Stephen, Sandra McNally, and Jenifer Ruiz-Valenzuela (2020). 'Entry through the narrow door: The costs of just failing high stakes exams.' Journal of Public Economics, 190. https://doi.org/10.1016/j.jpubeco.2020.104224

difficulty was the fact that GCSE and A Level grades had previously been determined by how students performed in comparison to their peer group rather than by meeting certain criteria – if teachers now assigned the grades themselves, as was the most likely solution, they would have to attempt to place the abilities of their own students within those of a national cohort about whom they had little information. It was likely teachers would be optimistic about their own students' abilities, leading to higher average grades. And this would, in turn, threaten the extent to which those grades could serve their function as a comparable signal of student achievement.

When policymakers' solutions played out in the public sphere, they were not generously received. In 2020, the Department for Education opted to use teacher predictions alongside a statistical moderation process to ensure that the grades — both overall and within each school — were not considerably higher than those in previous years. However, this approach led to a public outcry of such magnitude that the policy was withdrawn the day after students received their grades, with the Prime Minister blaming a "mutant algorithm" for the u-turn and publicly dismissing a top civil servant.[3] In 2021, schools were instead asked to run their own examinations and then submit grades with evidence to back up each of their decisions. However this approach did no better at commanding public trust, with some parents preparing formal appeals against their children's schools even before the 2021 grades had been released.[4]

Policymakers' trade-offs therefore highlighted the fragility of the existing examination system, bringing to light both new and old issues embedded in long-established processes. The new grading arrangements had needed to address these issues, but to what extent should problems created by the pandemic – like significantly higher grades overall – have taken precedence over problems exacerbated by the pandemic, such as differential learning loss between schools and students?

Fairness between cohorts

For some, the most important consideration for grading arrangements in 2020 and 2021 was consistency. Previously, the grade boundaries for GCSEs and A Levels had been specifically set so that the proportion of students achieving each grade was similar to that in previous years.[5] This was primarily intended to allow future employers and advanced education providers, such as universities, to fairly compare applicants from different cohorts who might apply for the same opportunity.[6]

When examinations were cancelled in 2020 and 2021, and teachers were tasked with assigning

[3] Coughlan, Sean (2020). 'A-levels and GCSEs: Boris Johnson blames "mutant algorithm" for exam fiasco'. London: British Broadcasting Corporation. https://www.bbc.co.uk/news/education-53923279

[4] Fazackerley, Anna, and Michael Savage (2021) 'Parents in UK prepare for legal action over A-level results'. London: The Guardian. https://www.theguardian.com/education/2021/may/30/parents-in-uk-prepare-for-legal-action-over-a-level-results?CMP=Share_AndroidApp_Other

[5] This process is called the Comparable Outcomes Framework. It allows some adjustment for differences in the difficulty of examination papers and for the prior attainment of specific cohorts. For more information see Balaban, Corina, James Lloyd and Phoebe Surridge (2021). 'Comparable Outcomes: Setting the standard?' AQI, accessed 14th June 2022. https://www.aqi.org.uk/briefings/comparable-outcomes-setting-the-standard/

[6] Students in England are in the same cohort if they begin school in the same academic year, usually when they are age 4. Moving between cohorts is very rare, so these students are usually taught together until they leave compulsory full-time education.

grades to their own students, it was considered likely that the grades would be higher than those in previous years. This was, in the words of one school leader, because "schools may, understandably, [give] some students the benefit of the doubt when they are on the borderline" between two grades.[7]

However higher grades for the 2020 and 2021 cohorts would make life harder for students in non-disrupted years who may later compete with them for further education and training opportunities. This was a particular concern given that a considerable number of the 2020 and 2021 cohorts were expected to defer university applications until after the height of the pandemic had passed.[8] In addition, at least some students from these more and less generously graded cohorts were likely to apply for the same employment opportunities in the future, for which GCSE, A Level, and equivalent grades were often still requested. As another school leader commented, "When we're thinking about fairness and equality, of course, first and foremost, we think about this year's cohort. But we have to think about fairness and equality with previous cohorts and with future cohorts as well."[9]

In light of these and other concerns, the Department for Education in 2020 decided that students' grades would not be determined by teacher assessment alone. Instead, they would determine the final grades received by students by applying an algorithm to those given by teachers. This would ensure that the proportions of each grade received at both the school level and the national level were consistent with previous years, informed by data on the historical results of each school and a ranking of students within them.[10] It also guaranteed that no school was raising their grades significantly more than another. The policy was welcomed by Universities UK, representing the UK higher education sector, who believed that the qualifications would therefore "hold their value" and that the processes would enable progression to further education or jobs without being at "the expense of academic standards".[11]

When the algorithmically-adjusted grades were released in August 2020, however, the public response was overwhelmingly negative. Since the grades that students received were informed by

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[7] Richardson, Hannah and Katherine Sellgren (2020). 'Pupils get GCSE grades as BTec results are pulled'. London: British Broadcasting Corporation. https://www.bbc.com/news/education-53833723

[8] See Weale, Sally, Rachel Hall and Richard Adams (2022). 'First post-Covid school leavers face fight for fewer university places'. London: The Guardian.
https://www.theguardian.com/education/2022/jun/11/first-post-covid-school-leavers-face-fight-for-fewer-university-places

[9] Lough, Catherine and Amy Gibbons (2021). 'GCSE and A level results 2021: What did teachers learn?' Times Education Supplement Magazine. London: The Times.
https://www.tes.com/magazine/news/secondary/gcse-and-level-results-2021-what-did-teachers-learn

[10] The algorithm was based on the Comparable Outcomes Framework as well as the historical results of the school. In practice, teacher assessments were automatically scaled up or down so that they replicated the average proportion of grades that the school's previous three cohorts had achieved. For more information see Office of Qualifications and Examinations Regulation (2020). 'Awarding GCSE, AS, A level, advanced extension awards and extended project qualifications in summer 2020: interim
report'. Great Britain: Office of Qualifications and Examinations Regulation.
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/909368/6656-1_Awarding_GCSE__AS__A_level__advanced_extension_awards_and_extended_project_qualifications_in_summer_2020_-_interim_report.pdf

[11] Universities UK (2020). 'Universities UK response to NUS letter calling for "no detriment" exam policy'. London: Universities UK.
https://www.universitiesuk.ac.uk/topics/covid/universities-uk-response-nus-letter

the prior performance of their school, some individually high-achieving students in historically low-attaining schools were denied top grades, sometimes missing the grades that they needed to meet their university offers.[12] In the words of the president of the National Union of Students, this impacted "who's had to pick a different university, who's been forced to defer… [and] on the demographics of our universities" in a manner which was "completely unjust".[13] One student who missed a conditional offer at her chosen university declared in frustration: "I just think it is very unfair that because of past performance in this area and particularly in my school that I haven't got in… that computer doesn't know that I got to school every single day at seven am revising… that computer doesn't even know who I am and that I exist".[14]

Was it defensible that these students' futures had been upended due to the decisions of a statistical model? Such outcomes were near-impossible for the government to justify. As a result, the fiasco was blamed on a "mutant algorithm" and the higher, purely teacher-assessed grades restored within a matter of days.

Fairness between schools

By 2021, although students had more or less returned to classrooms, new issues regarding the fairness of national examinations had risen to the surface. During school closures, the education that schools were able to provide at a distance had varied greatly, with some able to rely on their students each having a personal laptop whilst others had relied on packets of printed resources.[15] Moreover, many of the poorest areas of the country were the most heavily impacted by school absences and partial closures after the height of the pandemic, meaning that, even after schools reopened, their students missed out on a greater amount of face-to-face learning than those in more affluent regions.[16]

The injustice that these circumstances unveiled was not new, but it was more blatant. The potential negative consequences for students in more economically marginalised schools if examinations went ahead 'as normal' were palpable.

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[12] In reality, 40% of teacher-assessed grades were initially downgraded by the algorithm in 2020. See Office of Qualifications and Examinations Regulation (2020). 'Awarding GCSE, AS, A level, advanced extension awards and extended project qualifications in summer 2020: interim report'. Great Britain: Office of Qualifications and Examinations Regulation. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/909368/6656-1_Awarding_GCSE_AS_A_level_advanced_extension_awards_and_extended_project_qualifications_in_summer_2020_-_interim_report.pdf
See also Coughlan, Sean (2020). 'A-levels: Anger over "unfair" results this year'. London: British Broadcasting Corporation. https://www.bbc.co.uk/news/education-53759832

[13] Packham, Alfie (2020). 'NUS president Larissa Kennedy: "I worry universities won't put student and staff safety first"'. London: The Guardian. https://www.theguardian.com/education/2020/aug/31/nus-president-larissa-kennedy-interview

[14] Bremner, Juliet (2020). '"They're robust, they're good": Boris Johnson defends England A-level results as thousands of students degraded'. London: Independent Television. https://www.itv.com/news/2020-08-13/a-level-results-day-number-of-students-accepted-to-university-rises-amid-exam-results-controversy

[15] Del Bono, Emilia, Laura Fumagalli, Angus Holford and Birgitta Rabe (2021). 'Coping with school closures: changes in home-schooling during Covid-19.' Essex: Institute for Social and Economic Research, University of Essex. https://www.iser.essex.ac.uk/files/news/2021/little-inequality-homeschool/coping-with-school-closures.pdf

[16] Children's Commissioner (2020). 'School attendance since September'. London: Children's Commissioner for England. https://cco-web.azureedge.net/wp-content/uploads/2020/12/cco-briefing-on-school-attendance-since-september.pdf

Policymakers deciding how grades should be assigned in 2021 thus devised a new approach: have students sit formal examinations, but modify the exams to account for differences in learning opportunities during periods of school closure. Rather than test students on the entire curriculum, for instance, teachers were instructed to create customised examination papers which would test their students only on topics about which they had actually been taught. Schools would then combine these results with other data at their disposal and use this evidence – which could be checked by an external adjudicator – to assign each student a grade. OCR, an exam-setting organisation, stated that such a "strongly evidence-based approach" would "promote public confidence" in the examination results received.[17]

This compromise, however, was not watertight. First, it meant that the flexibility granted to schools was incomparable to the strict processes of the pre-pandemic years. Schools in 2021 were permitted to distribute pre-released lists of the topics to be examined and to hold the examinations in low-intensity classroom settings, neither of which had been options prior to the pandemic. While some students, parents, and educators may have felt that such flexibility was long overdue, it represented a sharp break from prior policies.

Furthermore, disparities seemed, if anything, to be exacerbated rather than ameliorated by the latitude that teachers and schools were permitted. One fee-paying (private) school achieved significant notoriety when its proportion of top A Level grades soared from 34 percent in 2019 to 90 percent in 2021.[18] Once this was found to be exemplary of a wider trend by which grade increases were a lot higher in fee-paying schools than those which were government-funded, concerns grew.

Was it fair to merely replace variation in how schools were impacted by Covid-19 with variation in how schools designed and marked their own assessments? Could it really be claimed that these results were as robust as those in non-disrupted years? And, even if this was possible in theory, did the importance of students' results to school league tables in England introduce incentives against which it was impossible to mitigate?

Although, on release, the 2021 grades were not subjected to the overhaul experienced the previous year, students lodged four times as many appeals against their schools' decisions.[19] Students of teachers who had put faith into the system acting fairly were likely the ones who faced the greatest repercussions when it became apparent that it had not.

Fairness between students

Finally, despite the 2020 and 2021 grading arrangements attempting to achieve a semblance of

[17] Oxford Cambridge and RSA (2021). 'Consultation on how GCSE, AS and A Level grades should be awarded in summer 2021: the OCR response'. Cambridge: OCR. https://www.ocr.org.uk/Images/609621-summary-of-the-ocr-response-to-dfe-ofqual-consultation-how-gcse-as-and-a-level-grades-should-be-awarded-in-summer-2021.pdf

[18] McCall, Alastair, Sian Griffiths and Nick Rodriguez (2022). 'Private schools "gamed" Covid rules to give their pupils more top A-levels.' London: The Times. https://www.thetimes.co.uk/article/6bf66e7c-85fd-11ec-9c9e-c5f8451b2970?shareToken=7a9ad0e8241d545e98106d6ee8317344

[19] Lumby, Tommy (2022). 'GCSE and A-Level grade appeals soared in 2021, Ofqual data shows'. Cardiff: Wales Online. https://www.walesonline.co.uk/news/uk-news/gcse-level-grade-appeals-soared-23128647

fairness between schools, it was impossible to ignore the fact that schools would be facing dilemmas about fairness within their own student bodies. How should the exam performance of a student who, during school closures, had had consistent internet access and a quiet room in which to work be compared to that of a student who shared a single device with their siblings? How should teachers judge the attainment of a student who had to take on extra paid work during the pandemic because others in their household were shielding? And what of students with sensory impairment, for whom there would have been additional learning loss through remote instruction? Research by an education think tank revealed that 40 percent of middle-class children had undertaken over five hours of schoolwork a day during school closures, compared to just 26 percent of those in working-class households.[20] Although some of this gap will have been driven by differences between the schools that these students attended, significant gaps were also likely to exist between middle- and working-class students within the same school, and indeed within the same classroom.

The difficulty for policymakers considering grading fairness between individual students, however, was that it invited questions about examination grades that extended far beyond Covid-19.

The attainment gap between students eligible for free lunches and their more advantaged peers had been shown to be growing rather than shrinking prior to Covid-19.[21] This situation had only worsened since.[22] Policymakers may have considered trying to account for such systematic disadvantage by allowing teachers to raise grades beyond that for which they had evidence, based on extenuating circumstances. But how would these circumstances have been categorised, and what precedent would it have set for future years?

Moreover, none of the attempted grading arrangements appeared able to avoid reproducing broader patterns of inequality. Students with graduate parents, for example, were found to be unfairly advantaged by teacher-assigned grades, illustrating how less standardised assessment systems may be more easily gamed by those with greater resources.[23] But aren't more standardised assessments, even if they are less easy to manipulate, arguably still merely measuring the years of advantage that those with greater resources already have?[24]

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[20] In the UK, 'middle-class' can be broadly understood to refer to those who work in managerial or professional occupations and 'working-class' to those who work in routine and manual occupations. The statistic is taken from Cullinane, Carl and Rebecca Montacute (2020). 'Covid-19 and Social Mobility Impact Brief: School Closures'. London: The Sutton Trust. https://www.suttontrust.com/wp-content/uploads/2021/01/School-Shutdown-Covid-19.pdf

[21] Hutchinson, Jo, Mary Reader and Avinash Akhal (2020). Education in England: Annual Report 2020. London: Education Policy Institute. https://epi.org.uk/publications-and-research/education-in-england-annual-report-2020/

[22] The attainment gap between more and less privileged students grew further during the first year of the pandemic such that it reversed almost ten years' progress. See Renaissance Learning and Education Policy Institute (2021). 'Understanding Progress in the 2020/21 Academic Year: Complete findings from the Autumn term'. London: Department of Education. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1062287/Understanding_progress_in_the_2020-21_academic_year_Complete_findings_from_spring_term_Oct2021.pdf

[23] One example of this is that Anders, Jake, Lindsey Macmillan, Patrick Sturgis, and Gill Wyness (2021). 'The 'graduate parent' advantage in teacher assessed grades.' London: UCL. https://blogs.ucl.ac.uk/cepeo/2021/06/08/thegraduate-parentadvantageinteacherassessedgrades/

[24] Freedman, S. and Hares, S. (2021) [Twitter] 31 May. Available at: https://twitter.com/samfr/status/1399485039440760841?lang=ar (Accessed: 1 June 2021).

Looking Back and Looking Ahead

Educators' and policymakers' decisions about how to assign grades in England during Covid-19 raised significant practical and ethical dilemmas. Was it more important to prioritise fairness between cohorts, fairness between schools, or fairness between groups of pupils who experienced hardships to different extents during the pandemic? How should answers to this question guide the Department for Education if it is forced to cancel examinations again in some future year? More fundamentally, is it plausible to describe England's national examinations as 'fair' along any dimension, pandemic or no pandemic? Indeed, how might the issues with high-intensity, high-stakes examinations in England that were exposed by Covid-19, but not limited to or even created by it, be addressed whether another crisis occurs or not?

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