The impact of reducing the number of exams on results in GCSEs

Research Report

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1. Introduction

GCSE students are required to take a large number of exams at the end of their courses. This has led to calls recently for a reduction in the amount of assessment for these students.

The OCR GCSE Maths Taskforce are particularly concerned about the amount of assessment in their subject. At present, GCSE Maths is made up of three exam components, each of which is 1.5 hours long. Many stakeholders believe that this is too much assessment. One simple way of reducing this would be to remove one of the assessments (by combining the content of the three components into two components / exams). However, a concern with this is that this might reduce the reliability and validity of the final grade because it would be based on fewer exams.

The main aim of this research was to investigate the impact of reducing the number of components on overall performance in GCSE subjects. In particular, we were interested in how the grade achieved by candidates on a reduced number of components compares to their grade on the full qualification.

Although the request for the work came from the GCSE Maths Taskforce, it is of interest (and of possible future benefit) to look at other subjects as well. Previous work (Gill, 2020) investigated the impact of using just one component on overall grades. That analysis looked at all GCSEs, no matter how many components. In the current research, we mainly looked at GCSEs with three components and the impact of reducing this to two. We also looked at the two combined science GCSEs (which have six and four components respectively) and the impact of reducing the number of exams to three in each case.

2. Data and methods

The data for this research was taken from the results tables for June 2024 in the ISP warehouse. These tables include component level marks and grades as well as overall marks and grades. We identified all GCSEs with three components, so that the impact of reducing the number of components to two could be investigated. However, to keep the analysis as simple as possible we excluded any subjects where candidates had some choice of which components to take. We also excluded any subjects where the weighting of a component (i.e., how much it contributes to the overall grade) was different from the percentage of overall marks for that component.

We also investigated the two Combined Science subjects, as these have more components than other GCSEs (six and four) and therefore more scope for reducing the number of exams. The full list of subjects included in the analysis was:

Citizenship Studies, Drama, Geography A, Geography B, Music, Mathematics, PE, Combined Science A, and Combined Science B.

It should be noted that both Drama and Music consist of two non-exam assessed (NEA) components and one exam component. PE consists of one NEA component (practical) and two exam components[1]. All other subjects are exam only.

The main analysis involved comparing the aggregated marks and grades from the reduced number of components with the actual grades achieved by candidates on the full

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[1] In PE there is an additional NEA component (Analysis and evaluation of performance). However, this only counts for 10% of the final mark so it was ignored in this analysis.

qualification. The aggregated 'grade' in each combination of components was calculated by adding up the marks achieved in each component in the combination and comparing that to the sum of the grade boundary marks in these components. Table 1 gives an example for a candidate taking GCSE Maths higher tier. This shows the grade boundary marks and candidate marks and grades for each component separately (04, 05, and 06) and then the aggregated boundary marks and candidate marks and grades for each combination of components (04-05, 04-06, and 05-06). For each combination of components, the aggregated grade 8 boundary was 130. For components 04 and 05 the candidate total mark was 131, giving them an aggregated grade 8. For the other two combinations the candidate total mark was below 130, so their aggregated grade was a 7. Overall, the candidate got a mark of 191, which was a grade 7. This means that this candidate achieved the same grade as their overall grade if components 04 and 06 or 05 and 06 were used, but a different grade if components 04 and 05 were used.

Table 1: Example of calculation of aggregated grade from component combinations

Component(s)	Grade boundary marks		Candidate performance	
	Grade 7	Grade 8	Marks	Grade
04	49	65	69	8
05	49	65	62	7
06	47	65	60	7
04-05	98	130	131	8
04-06	96	130	129	7
05-06	96	130	122	7
Overall	**145**	**195**	**191**	**7**

We used several different measures to assess how the marks or grades achieved in the reduced number of components compared to the overall grade for each candidate. These were:

1) Proportion of students taking each combination of components who achieved the same aggregated 'grade' in these components as overall qualification grade.
2) Proportion of students achieving a 'grade' in the component combination which was within one grade of the qualification grade.
3) Correlation between component combination total mark and overall grade.
4) Correlation between component combination 'grade' and overall grade.

Measures 1), 2), and 4) were calculated a second time, after adjusting the sum of component level grade boundary marks so that the percentage of students achieving each grade was as close as possible to the percentages in the whole qualification. This simulated a situation where students are graded based on their performance in the reduced number of components, whilst ensuring the overall standard remained the same as if they took whole qualification. Measure 3) would not change after adjusting grade boundaries, so was not recalculated.

For the subjects with three components, the impact of using each possible combination of two components was investigated (e.g., components 01 and 02, 01 and 03, and 02 and 03).

For the two Combined Science subjects, the combinations of components investigated were based on the most plausible reductions given the structure of the qualifications. In Combined Science A there are six exams, two for each topic (Biology, Chemistry, and Physics). It therefore made sense to consider the impact of reducing this to one exam per

topic, and so each possible combination that fitted this change was investigated. Components 01 and 02 were Biology, 03 and 04 were Chemistry, and 05 and 06 were Physics. Thus, the possible combinations of three components (one from each topic) were:

- 01, 03, 05
- 01, 04, 05
- 01, 03, 06
- 01, 04, 06
- 02, 03, 05
- 02, 04, 05
- 02, 03, 06
- 02, 04, 06

Combined Science A is a tiered qualification, and the above combinations were for foundation tier candidates only. The analysis was repeated for higher tier candidates.

For Combined Science B, there are four exams, one for each topic, and a combined paper. Here it made sense to investigate the impact of removing the combined paper, so that one exam for each topic was still included. This meant there was only one possible combination of components to investigate (i.e., 01, 02, and 03). Again, this is a tiered subject, so we investigated this for both foundation and higher tier.

The analysis was repeated in each subject for different groups of candidates. The aim of this was to investigate whether any groups of candidates would potentially be disadvantaged by the reduction in the number of exams. In particular, candidates were split into the following groups:

- Gender – female or male, as recorded in ISP
- Centre type attended – centres were split into two groups: non-selective state schools or independent / selective schools.

For this analysis, we only investigated the impact after adjusting the grade boundaries so that the overall standard remained the same.

Finally, we investigated how the proportion of candidates achieving the same grade changed for different levels of overall marks in each subject. This gives an indication of the attainment of the candidates most likely to be affected by any changes.

3. Results

Table 2 shows the results for the GCSEs with three components. This lists all possible pair-wise combinations of components in each subject, the percentage of overall marks that the combination includes, the percentage of candidates achieving the same grade or within one grade, and the correlations. Table 3 presents the results for the two combined science GCSEs. These are the results without adjusting grade boundary marks.

In terms of the percentage of candidates with the same grade, this was highest in Maths with figures of around 85%. Not surprisingly, this is substantially higher than the same grade percentages from using only one component, which were between 67% and 75% (Gill, 2020). Almost all candidates had a grade within one grade of their overall grade (over 99.9%).

Table 2: Grade comparison measures, by component combination (subjects with 3 components)

Subject	Candidates	Component combination	% of overall marks in the combination	% same grade	% within 1 grade	Correlation mark-grade	Correlation grade-grade
Citizenship Studies	2334	J270/01/02	75.0	74.9	99.8	0.97	0.98
		J270/01/03	50.0	49.0	95.3	0.94	0.94
		J270/02/03	75.0	71.1	99.8	0.97	0.98
Drama	6083	J316/01/03**	60.0	48.2	90.9	0.93	0.92
		J316/01/04*	70.0	59.9	98.7	0.95	0.94
		J316/03/04*	70.0	62.4	98.8	0.94	0.93
Geography A	5915	J383/01/02	60.0	62.3	99.2	0.97	0.98
		J383/01/03	70.0	67.5	99.5	0.97	0.98
		J383/02/03	70.0	69.3	99.8	0.97	0.98
Geography B	19434	J384/01/02	70.0	64.2	99.4	0.97	0.97
		J384/01/03	65.0	65.0	99.4	0.96	0.96
		J384/02/03	65.0	69.4	99.4	0.97	0.96
Music	6817	J536/01/03**	60.0	38.9	77.2	0.90	0.90
		J536/01/05*	70.0	59.7	99.2	0.97	0.96
		J536/03/05*	70.0	59.6	98.8	0.96	0.96
Mathematics (Foundation)	44564	J560/01/02	66.7	86.8	>99.9	0.97	0.96
		J560/01/03	66.7	86.7	>99.9	0.97	0.96
		J560/02/03	66.7	85.5	>99.9	0.96	0.96
Mathematics (Higher)	26034	J560/04/05	66.7	84.0	99.9	0.96	0.96
		J560/04/06	66.7	85.5	99.9	0.97	0.97
		J560/05/06	66.7	85.0	99.9	0.97	0.97
PE	22924	J587/01/02	60.0	46.0	91.5	0.92	0.91
		J587/01/04*	60.0	57.0	97.3	0.94	0.94
		J587/02/04*	60.0	50.0	93.8	0.93	0.91

* Combination includes one NEA component
** Combination includes two NEA components

In other subjects, same grade percentages were lower, varying between 38.9% (Music components 01 and 03) and 80.4% (Combined Science B components 01, 02, and 03). Amongst the three component subjects, Citizenship Studies and both the Geography specifications had the highest percentages, while Music and PE had the lowest. In Combined Science A, the same grade percentages were 62-65% for foundation tier components and 47-54% for higher tier. However, in both tiers, the percentages within one grade were almost all above 95%. In Combined Science B the percentages with the same grade were 73.1% for higher tier and 80.4% for foundation tier.

In Maths, there were only very small differences in percentages between the different component combinations. However, in some subjects there was significant variation in the percentage of candidates with the same grade between the component combinations. For example, in Music only 38.9% had the same grade when using components 01 and 03, compared with around 60% for the other combinations. Further investigation of this revealed that this was because components 01 and 03 were non-exam assessments and performance in these was much higher than performance in the exam component (05).

Thus, many students achieved a higher 'grade' in the combination of components 01 and 03 than they did overall.

In all subjects and all component combinations, the correlations were very high (above 0.90), both marks-grades and grades-grades.

Table 3: Grade comparison measures by component combination (Combined Science subjects)

Subject	Candidates	Component combination	% of overall marks in the combination	% same grade	% within 1 grade	Correlation mark-grade	Correlation grade-grade
Combined Science A (Foundation)	8395	J250/01/03/05	50.0	62.5	96.7	0.96	0.96
		J250/01/04/05	50.0	64.3	96.8	0.97	0.97
		J250/01/03/06	50.0	62.7	96.3	0.96	0.96
		J250/01/04/06	50.0	63.0	96.8	0.96	0.96
		J250/02/03/05	50.0	64.9	96.8	0.97	0.97
		J250/02/04/05	50.0	64.7	95.9	0.97	0.97
		J250/02/03/06	50.0	65.0	97.3	0.97	0.97
		J250/02/04/06	50.0	62.3	96.1	0.96	0.96
Combined Science A (Higher)	4544	J250/07/09/11	50.0	48.5	94.2	0.94	0.93
		J250/07/10/11	50.0	51.3	95.2	0.94	0.93
		J250/07/09/12	50.0	49.4	94.3	0.94	0.93
		J250/07/10/12	50.0	51.7	95.6	0.95	0.93
		J250/08/09/11	50.0	53.6	95.6	0.94	0.94
		J250/08/10/11	50.0	47.1	93.5	0.94	0.93
		J250/08/09/12	50.0	52.9	95.8	0.94	0.94
		J250/08/10/12	50.0	48.6	92.8	0.94	0.93
Combined Science B (Foundation)	2075	J260/01/02/03	79.2	80.4	99.0	0.98	0.98
Combined Science B (Higher)	1095	J260/05/06/07	79.2	73.1	99.0	0.95	0.96

Tables 4 and 5 present the results after adjusting grade boundaries. For all component combinations, the results were better than the results prior to the grade boundary adjustments, although the differences were generally not large. The change was smallest in Maths, where there was almost no difference. In other subjects, the percentages with the same grade vary between 45.5% (Music) and 80.4% (Combined Science B).

Table 4: Grade comparison measures by component combination (subjects with 3 components, adjusted grade boundaries)

Subject	Candidates	Component combination	% of overall marks in the combination	% same grade	% within 1 grade	Correlation grade-grade
Citizenship Studies	2334	J270/01/02	75.0	77.2	99.9	0.97
		J270/01/03	50.0	56.2	96.9	0.94
		J270/02/03	75.0	77.1	>99.9	0.97
Drama	6083	J316/01/03**	60.0	55.2	96.5	0.93
		J316/01/04*	70.0	65.1	99.1	0.95
		J316/03/04*	70.0	63.0	98.8	0.95
Geography A	5915	J383/01/02	60.0	69.7	99.8	0.97
		J383/01/03	70.0	75.0	99.9	0.98
		J383/02/03	70.0	73.0	99.9	0.97
Geography B	19434	J384/01/02	70.0	72.1	99.8	0.97
		J384/01/03	65.0	69.2	99.4	0.97
		J384/02/03	65.0	69.4	99.5	0.97
Music	6817	J536/01/03**	60.0	45.5	90.3	0.91
		J536/01/05*	70.0	68.1	99.6	0.97
		J536/03/05*	70.0	67.1	99.4	0.97
Mathematics	44564	J560/01/02	66.7	87.1	>99.9	0.97
		J560/01/03	66.7	86.7	>99.9	0.97
		J560/02/03	66.7	85.5	>99.9	0.96
Mathematics	26034	J560/04/05	66.7	84.7	>99.9	0.96
		J560/04/06	66.7	85.8	>99.9	0.97
		J560/05/06	66.7	86.4	>99.9	0.97
PE	22924	J587/01/02	60.0	49.5	93.9	0.92
		J587/01/04*	60.0	59.2	97.9	0.94
		J587/02/04*	60.0	54.1	95.5	0.93

* Combination includes one NEA component
** Combination includes two NEA components

Table 5: Grade comparison measures by component combination (Combined Science subjects, adjusted grade boundaries)

Subject	Candidates	Component combination	% of overall marks in the combination	% same grade	% within 1 grade	Correlation grade-grade
Combined Science A (Foundation)	8395	J250/01/03/05	50.0	63.6	96.8	0.96
		J250/01/04/05	50.0	65.7	97.2	0.97
		J250/01/03/06	50.0	64.0	96.9	0.96
		J250/01/04/06	50.0	64.1	96.9	0.96
		J250/02/03/05	50.0	67.5	97.5	0.97
		J250/02/04/05	50.0	66.6	97.3	0.97
		J250/02/03/06	50.0	66.0	97.5	0.97
		J250/02/04/06	50.0	62.9	96.5	0.96
Combined Science A (Higher)	4544	J250/07/09/11	50.0	51.8	95.2	0.94
		J250/07/10/11	50.0	51.5	95.5	0.95
		J250/07/09/12	50.0	53.8	96.4	0.94
		J250/07/10/12	50.0	52.6	96.3	0.95
		J250/08/09/11	50.0	54.0	95.9	0.94
		J250/08/10/11	50.0	51.3	94.5	0.94
		J250/08/09/12	50.0	55.6	96.3	0.95
		J250/08/10/12	50.0	50.4	94.0	0.94
Combined Science B (Foundation)	2075	J260/01/02/03	79.2	80.4	99.1	0.98
Combined Science B (Higher)	1095	J260/05/06/07	79.2	73.6	99.1	0.96

Tables 6 to 9 show the results broken down by candidate characteristics. These results are after adjusting the grade boundary marks so that standards remained the same as in the whole qualification.

In terms of gender (Tables 6 and 7), there were only small differences in each measure between female and male students. Similarly, for school type (Tables 8 and 9) there were only small differences in each measure between state schools and independent / selective schools for most subjects. The only exception to this was for Citizenship Studies, where the candidates achieving the same grade using marks from components 01 and 02 was 9.1 percentage points higher in independent or selective schools than in state schools. In contrast, for components 01 and 03, the percentage achieving the same grade was 9.1 percentage points higher in state schools.

Figures 1 to 12 show the proportion of candidates achieving each mark overall, who would have received the same grade under the reduced number of exams. Each line in the figures shows the results for a particular combination of components. The vertical lines indicate the location of the grade boundaries.

These figures clearly show that candidates with overall marks closest to the grade boundaries were least likely to get the same grade. Those getting marks furthest away from the grade boundaries were most likely to get the same grade.

This effect is most clearly seen in Maths, where the percentages achieving the same grade were close to 100% for candidates in the middle of a grade and were around 40% to 50% for candidates on marks around a grade boundary.

In some subjects (e.g., Geography B, PE), there was evidence that mid to high achieving candidates were less likely to get the same grade than low achieving candidates. However, this was because, in these subjects, the width of the grade boundaries was smaller for the higher grades. Therefore, even those candidates in the middle of a grade were still relatively likely to get a different grade.

Table 6: Grade comparison measures by component combination and gender (subjects with 3 components, adjusted grade boundaries)

Subject	Candidates (F)	Candidates (M)	Component combination	% same grade (F)	% same grade (M)	% within 1 grade (F)	% within 1 grade (M)	Correlation grade-grade (F)	Correlation grade-grade (M)
Citizenship Studies	1231	1103	J270/01/02	77.3	77.2	99.8	99.9	0.97	0.98
			J270/01/03	54.6	57.9	96.8	97.1	0.94	0.95
			J270/02/03	76.7	77.5	99.9	100.0	0.97	0.98
Drama	4229	1854	J316/01/03	53.7	58.6	96.4	96.7	0.92	0.93
			J316/01/04	65.0	65.4	99.0	99.4	0.95	0.95
			J316/03/04	62.1	64.8	98.8	98.9	0.94	0.95
Geography A	2516	3399	J383/01/02	70.0	69.5	99.8	99.8	0.97	0.97
			J383/01/03	74.4	75.3	99.9	99.9	0.98	0.98
			J383/02/03	74.0	72.2	99.9	100.0	0.98	0.97
Geography B	9056	10378	J384/01/02	72.4	71.7	99.8	99.8	0.97	0.97
			J384/01/03	69.1	69.4	99.4	99.4	0.97	0.97
			J384/02/03	70.0	68.8	99.4	99.6	0.97	0.97
Music	3417	3400	J536/01/03	44.4	46.5	89.8	90.8	0.90	0.92
			J536/01/05	68.0	68.1	99.6	99.5	0.96	0.97
			J536/03/05	66.4	67.8	99.4	99.4	0.96	0.97
Mathematics	22566	21997	J560/01/02	87.1	87.1	100.0	100.0	0.97	0.97
			J560/01/03	87.1	86.2	100.0	100.0	0.97	0.96
			J560/02/03	85.9	85.0	100.0	100.0	0.96	0.96
Mathematics	12343	13691	J560/04/05	85.1	84.4	100.0	100.0	0.96	0.96
			J560/04/06	85.8	85.8	100.0	99.9	0.97	0.97
			J560/05/06	85.9	86.9	100.0	100.0	0.96	0.97
PE	7612	15312	J587/01/02	46.8	50.8	91.8	94.9	0.91	0.92
			J587/01/04	57.8	59.8	97.9	97.9	0.95	0.94
			J587/02/04	52.3	55.0	94.9	95.7	0.93	0.93

Table 7: Grade comparison measures by component combination and gender (Combined Science subjects, adjusted grade boundaries)

Subject	Candidates (F)	Candidates (M)	Component combination	% same grade (F)	% same grade (M)	% within 1 grade (F)	% within 1 grade (M)	Correlation grade-grade (F)	Correlation grade-grade (M)
Combined Science A (Foundation)	4028	4367	J250/01/03/05	64.4	62.8	97.5	96.2	0.96	0.96
			J250/01/04/05	66.2	65.2	97.7	96.9	0.96	0.97
			J250/01/03/06	63.3	64.6	96.9	96.8	0.96	0.97
			J250/01/04/06	64.2	64.1	97.2	96.6	0.96	0.97
			J250/02/03/05	68.0	67.0	97.7	97.3	0.97	0.97
			J250/02/04/05	66.0	67.2	97.7	97.0	0.96	0.97
			J250/02/03/06	66.0	65.9	97.7	97.4	0.96	0.97
			J250/02/04/06	62.8	63.0	96.8	96.2	0.96	0.97
Combined Science A (Higher)	2456	2088	J250/07/09/11	51.1	52.8	95.0	95.5	0.95	0.93
			J250/07/10/11	51.3	51.7	95.8	95.0	0.95	0.94
			J250/07/09/12	53.0	54.7	96.1	96.7	0.93	0.95
			J250/07/10/12	53.7	51.2	96.3	96.4	0.95	0.94
			J250/08/09/11	53.4	54.8	95.6	96.3	0.94	0.93
			J250/08/10/11	50.9	51.7	94.6	94.3	0.94	0.94
			J250/08/09/12	54.9	56.3	96.4	96.1	0.95	0.95
			J250/08/10/12	52.0	48.5	94.3	93.7	0.95	0.93
Combined Science B (Foundation)	1033	1042	J260/01/02/03	79.5	81.4	99.0	99.1	0.98	0.98
Combined Science B (Higher)	585	510	J260/05/06/07	72.6	74.7	99.5	98.6	0.97	0.95

Table 8: Grade comparison measures by component combination and school type (subjects with 3 components, adjusted grade boundaries)

Subject	Candidates (State)	Candidates (Ind/Sel)	Component combination	% same grade (State)	% same grade (Ind/Sel)	% within 1 grade (State)	% within 1 grade (Ind/Sel)	Correlation grade-grade (State)	Correlation grade-grade (Ind/Sel)
Citizenship Studies	2235	99	J270/01/02	76.8	85.9	99.9	100.0	0.97	0.98
			J270/01/03	56.6	47.5	97.0	96.0	0.94	0.92
			J270/02/03	77.2	74.7	100.0	100.0	0.97	0.97
Drama	5397	686	J316/01/03	55.6	52.2	96.6	95.3	0.92	0.88
			J316/01/04	65.5	62.1	99.1	99.4	0.95	0.93
			J316/03/04	63.1	62.0	98.8	98.8	0.94	0.93
Geography A	5263	652	J383/01/02	69.6	70.6	99.8	99.7	0.97	0.96
			J383/01/03	75.3	72.5	99.9	99.8	0.98	0.96
			J383/02/03	73.1	72.4	99.9	100.0	0.97	0.96
Geography B	16863	2571	J384/01/02	72.4	70.1	99.8	99.8	0.97	0.94
			J384/01/03	69.4	68.1	99.4	99.6	0.97	0.94
			J384/02/03	69.8	66.6	99.5	99.5	0.97	0.93
Music	6075	742	J536/01/03	45.3	47.3	90.4	89.6	0.90	0.88
			J536/01/05	67.7	71.4	99.6	99.6	0.97	0.95
			J536/03/05	66.5	72.2	99.4	99.6	0.96	0.95
Mathematics	44295	269	J560/01/02	87.1	84.8	100.0	100.0	0.97	0.93
			J560/01/03	86.7	86.6	100.0	100.0	0.97	0.93
			J560/02/03	85.5	88.8	100.0	100.0	0.96	0.94
Mathematics	23984	2050	J560/04/05	84.5	87.9	100.0	100.0	0.96	0.97
			J560/04/06	85.7	87.6	100.0	100.0	0.96	0.97
			J560/05/06	86.2	88.7	100.0	99.9	0.97	0.97
PE	19167	3757	J587/01/02	50.1	46.7	94.2	92.4	0.92	0.88
			J587/01/04	59.2	59.0	97.9	98.0	0.94	0.92
			J587/02/04	54.8	50.6	95.7	94.4	0.92	0.88

Table 9: Grade comparison measures by component combination and school type (Combined Science subjects, adjusted grade boundaries)

Subject	Candidates (State)	Candidates (Ind/Sel)	Component combination	% same grade (State)	% same grade (Ind/Sel)	% within 1 grade (State)	% within 1 grade (Ind/Sel)	Correlation grade-grade (State)	Correlation grade-grade (Ind/Sel)
Combined Science A (Foundation)	8192	203	J250/01/03/05	63.7	59.1	96.8	97.0	0.96	0.92
			J250/01/04/05	65.6	70.4	97.2	98.0	0.97	0.95
			J250/01/03/06	64.0	62.6	96.9	98.0	0.96	0.93
			J250/01/04/06	64.1	67.0	96.8	98.5	0.96	0.94
			J250/02/03/05	67.4	70.4	97.4	99.0	0.97	0.95
			J250/02/04/05	66.6	68.5	97.3	97.5	0.97	0.94
			J250/02/03/06	65.9	67.5	97.5	99.0	0.97	0.95
			J250/02/04/06	63.0	57.6	96.5	95.6	0.96	0.92
Combined Science A (Higher)	4154	390	J250/07/09/11	51.5	55.1	95.2	94.9	0.94	0.95
			J250/07/10/11	51.3	53.1	95.6	94.4	0.94	0.95
			J250/07/09/12	53.5	56.7	96.3	97.4	0.94	0.97
			J250/07/10/12	52.7	51.0	96.3	96.2	0.95	0.96
			J250/08/09/11	53.9	55.1	96.0	94.9	0.94	0.94
			J250/08/10/11	51.0	53.6	94.4	95.1	0.94	0.95
			J250/08/09/12	55.3	57.9	96.3	96.2	0.94	0.96
			J250/08/10/12	50.6	48.2	94.0	94.1	0.94	0.93
Combined Science B (Foundation)	2028	47	J260/01/02/03	80.4	80.9	99.1	100.0	0.98	0.97
Combined Science B (Higher)	1021	74	J260/05/06/07	73.5	75.7	99.0	100.0	0.96	0.99
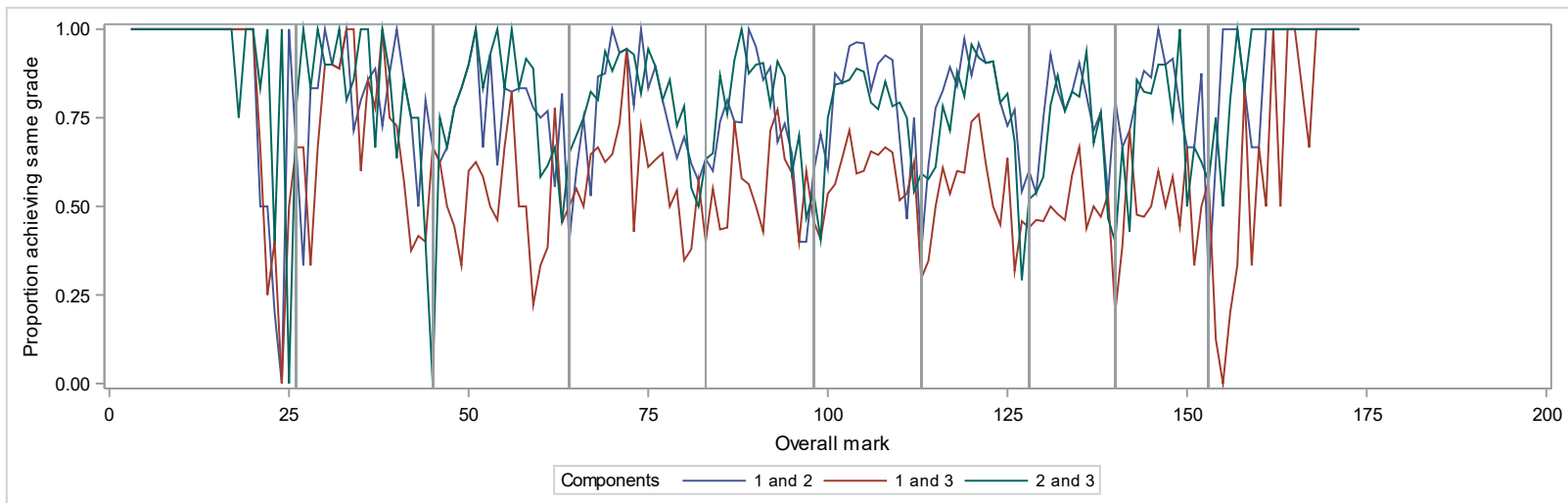
Figure 1: Grade comparison by component combination and overall mark (Citizenship Studies, adjusted grade boundaries)
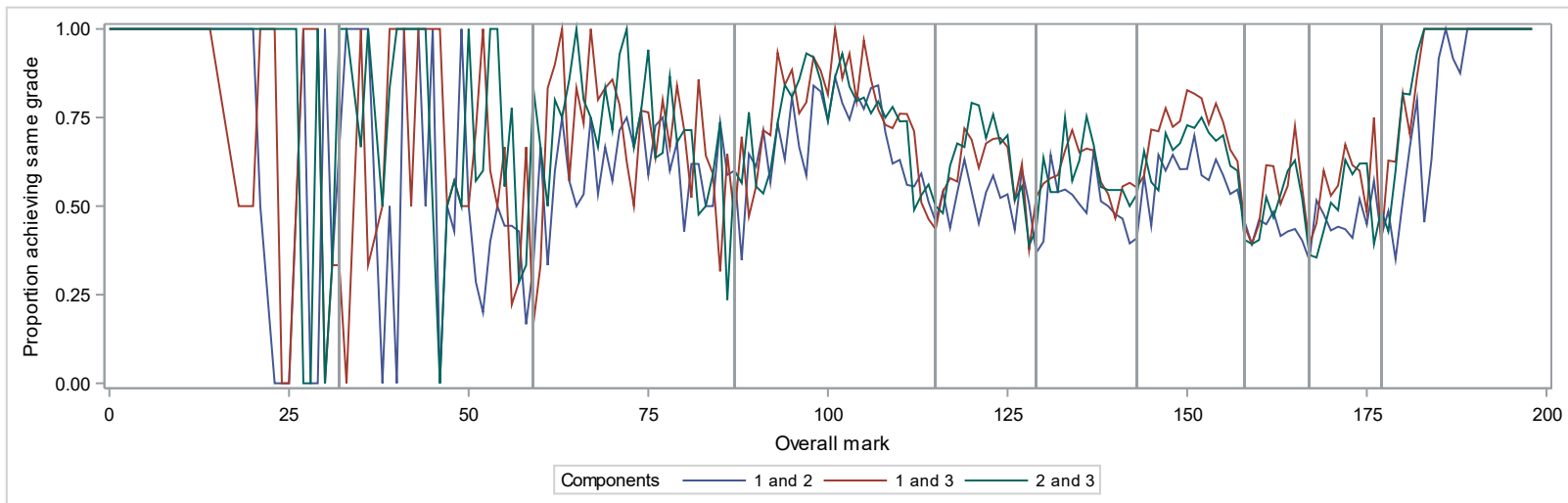
Figure 2: Grade comparison by component combination and overall mark (Drama, adjusted grade boundaries)
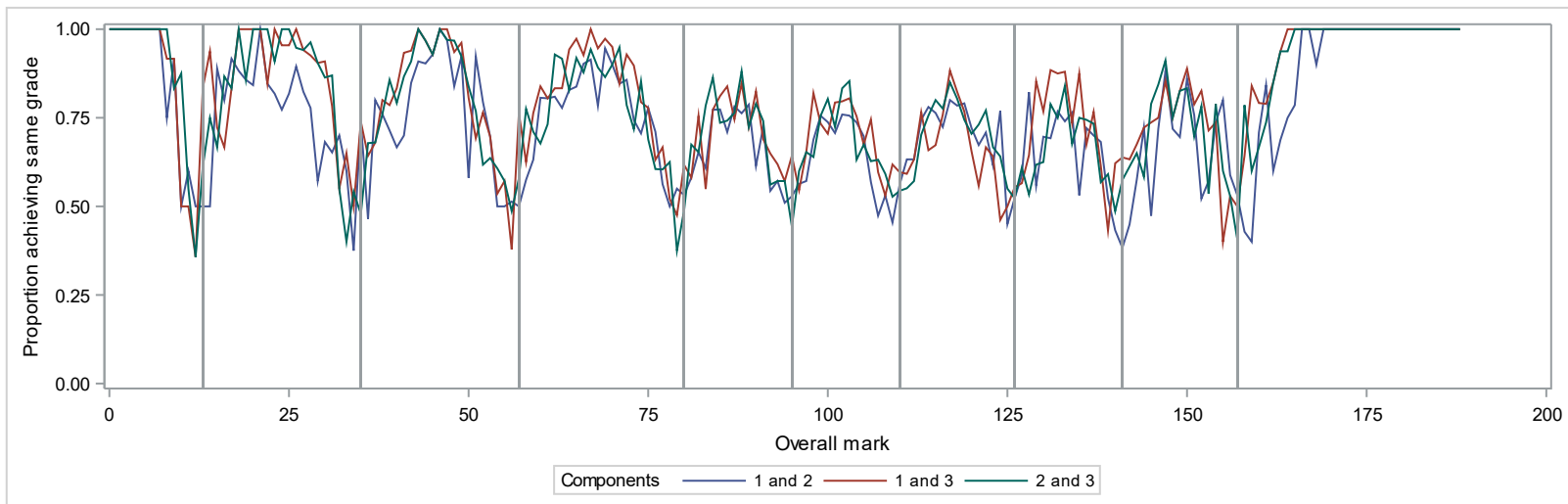
Figure 3: Grade comparison by component combination and overall mark (Geography A, adjusted grade boundaries)
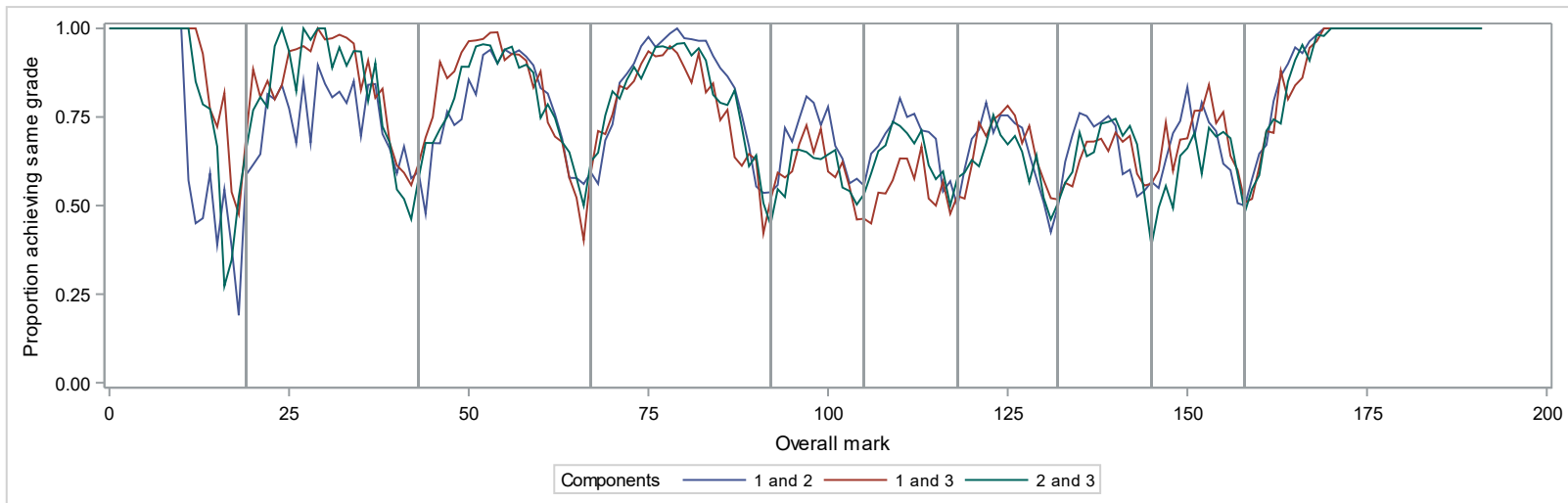

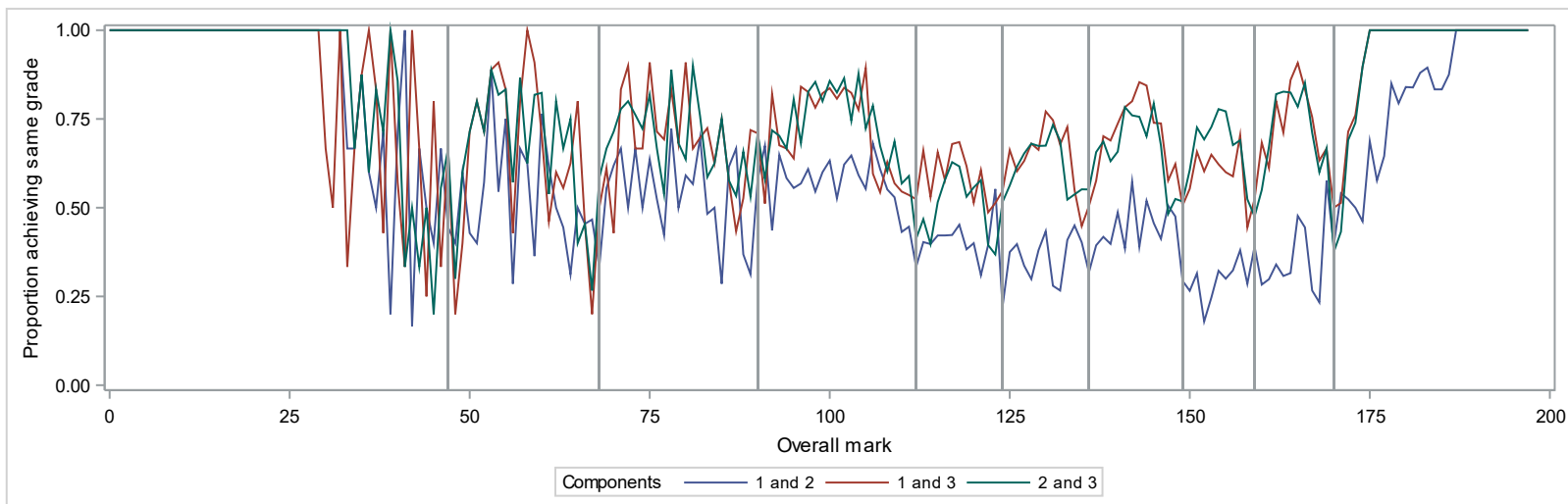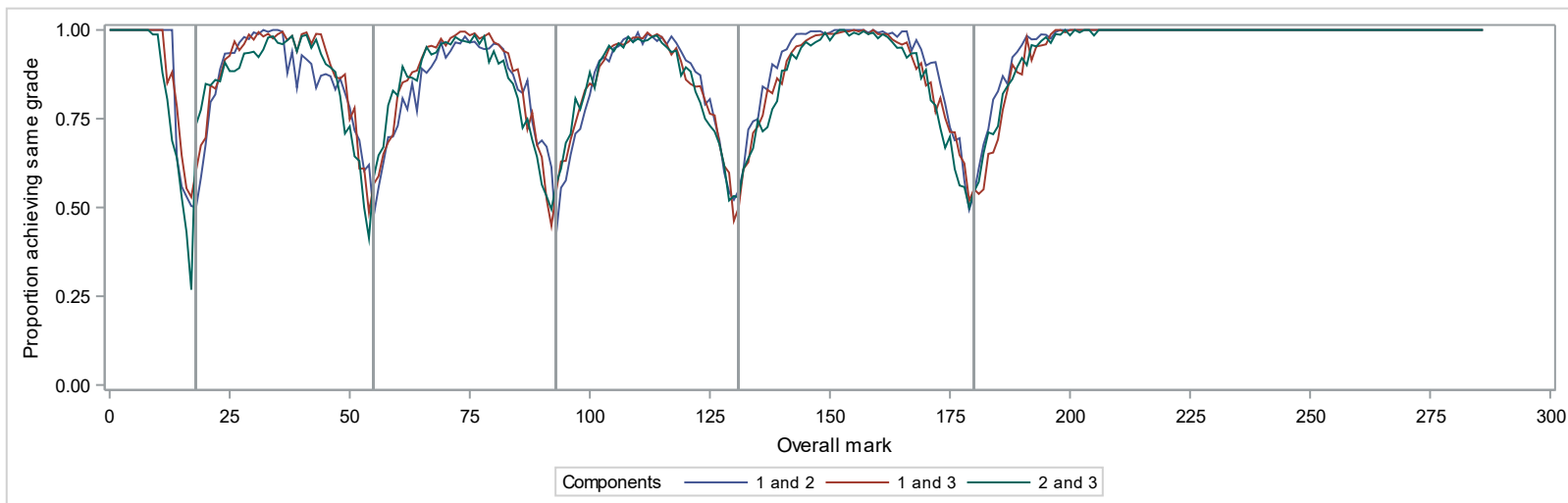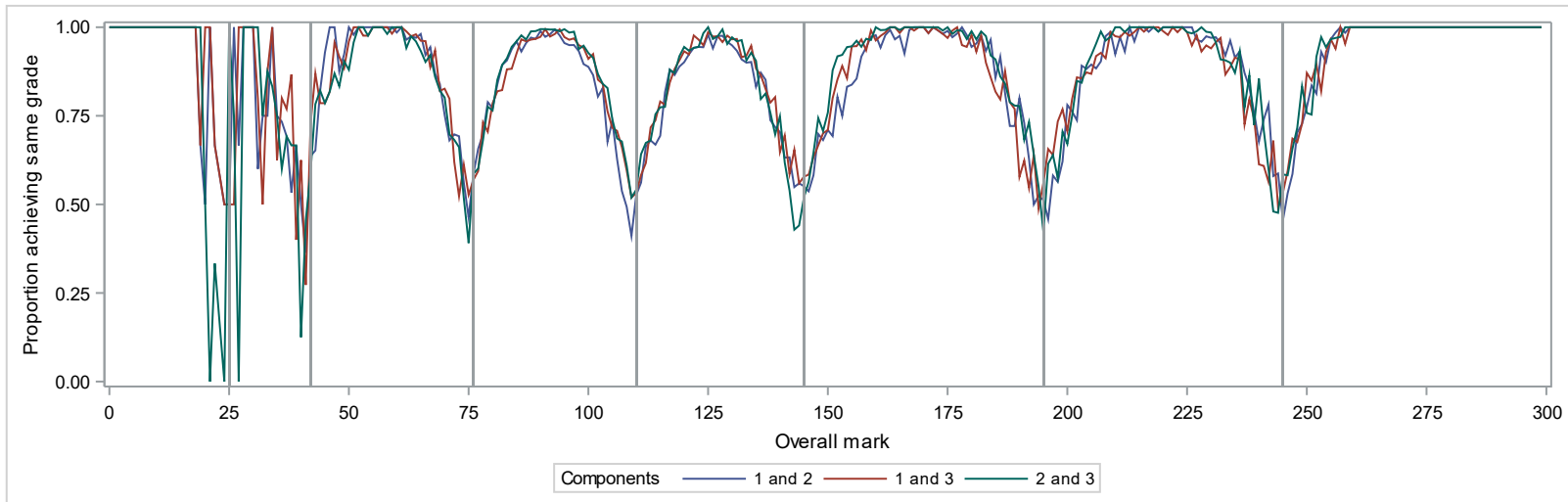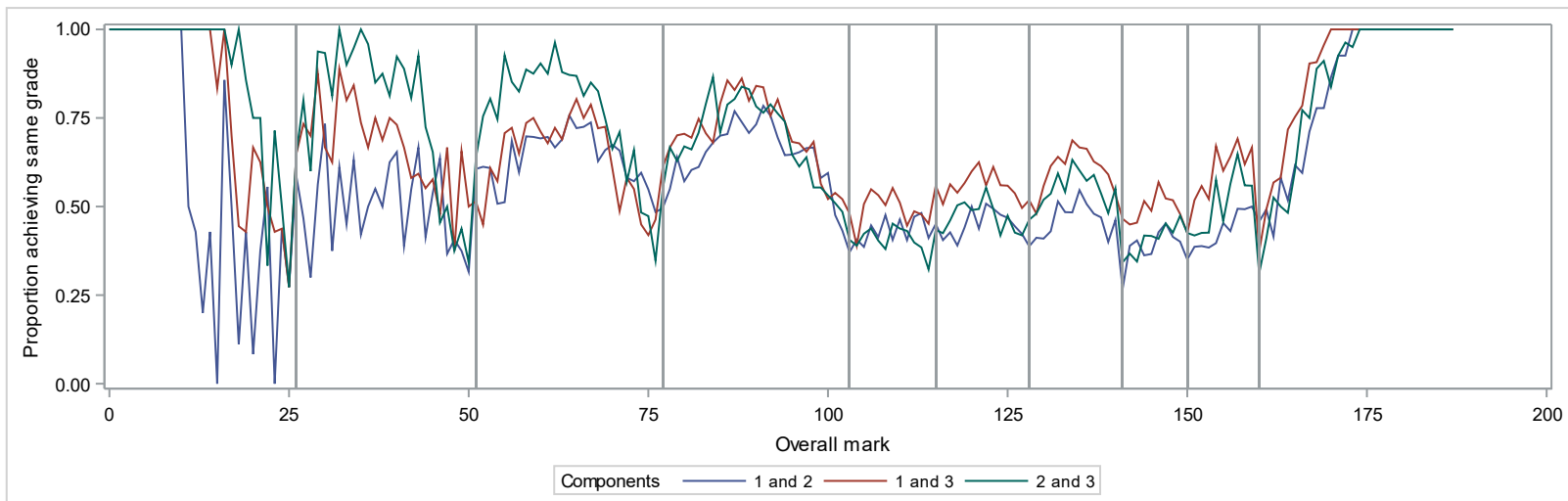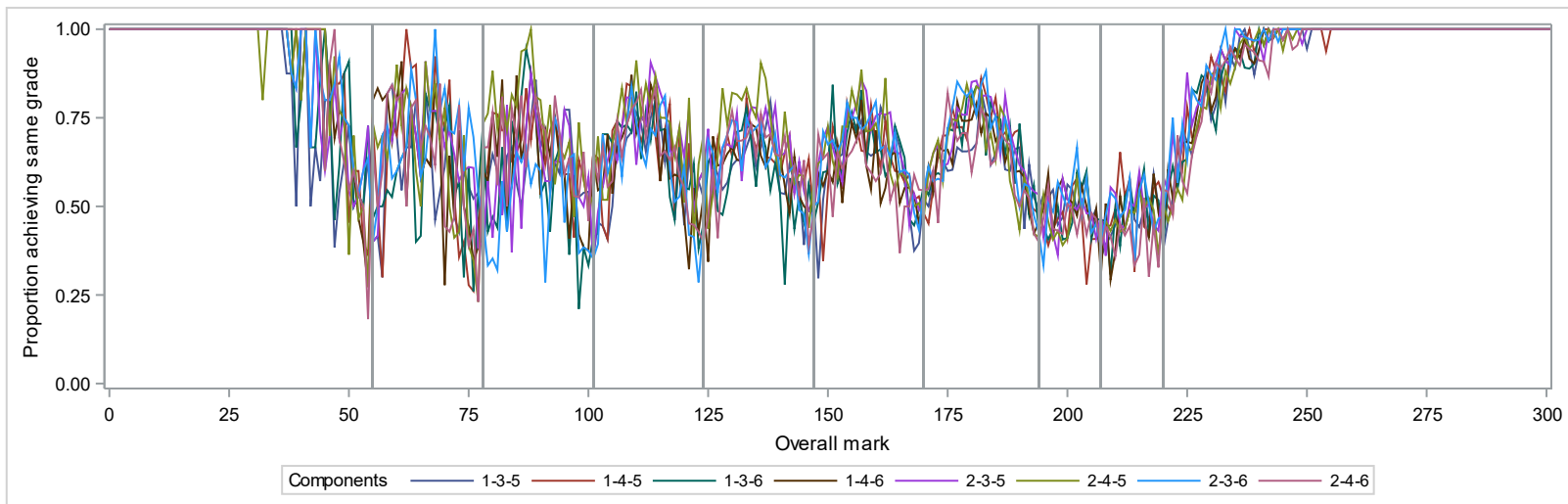Figure 4: Grade comparison by component combination and overall mark (Geography B, adjusted grade boundaries)

Figure 5: Grade comparison by component combination and overall mark (Music, adjusted grade boundaries)

Figure 6: Grade comparison by component combination and overall mark (Maths foundation tier, adjusted grade boundaries)
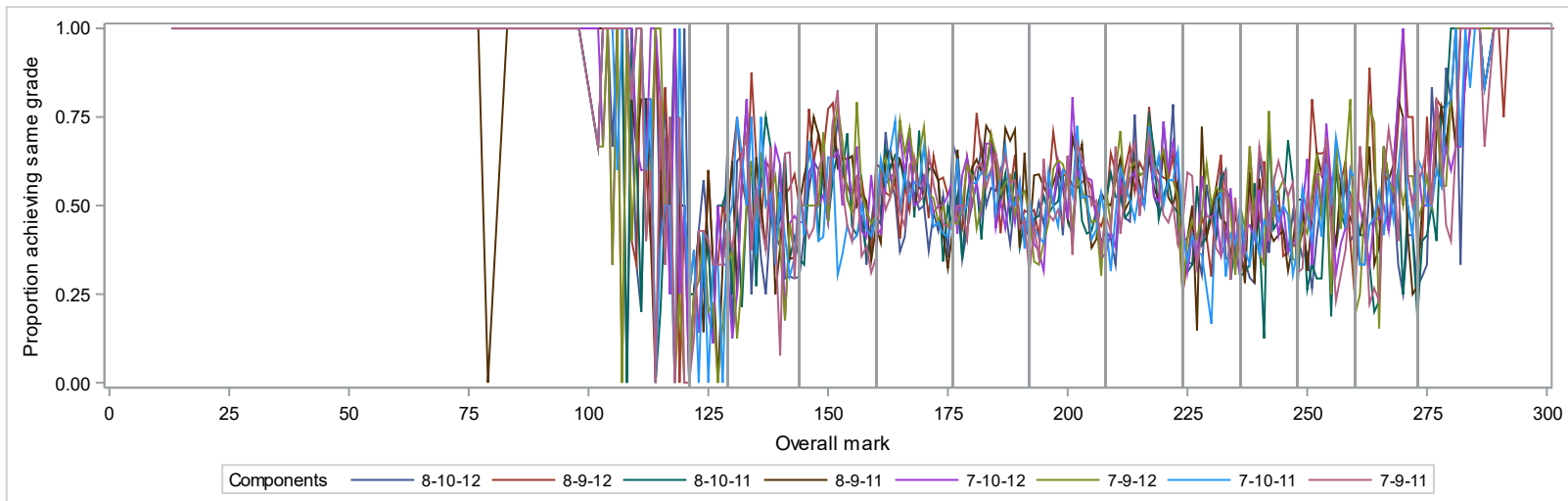
Figure 7: Grade comparison by component combination and overall mark (Maths higher tier, adjusted grade boundaries)

Figure 8: Grade comparison by component combination and overall mark (PE, adjusted grade boundaries)

Figure 9: Grade comparison by component combination and overall mark (Combined Science A foundation tier, adjusted grade boundaries)

Figure 10: Grade comparison by component combination and overall mark (Combined Science A higher tier, adjusted grade boundaries)
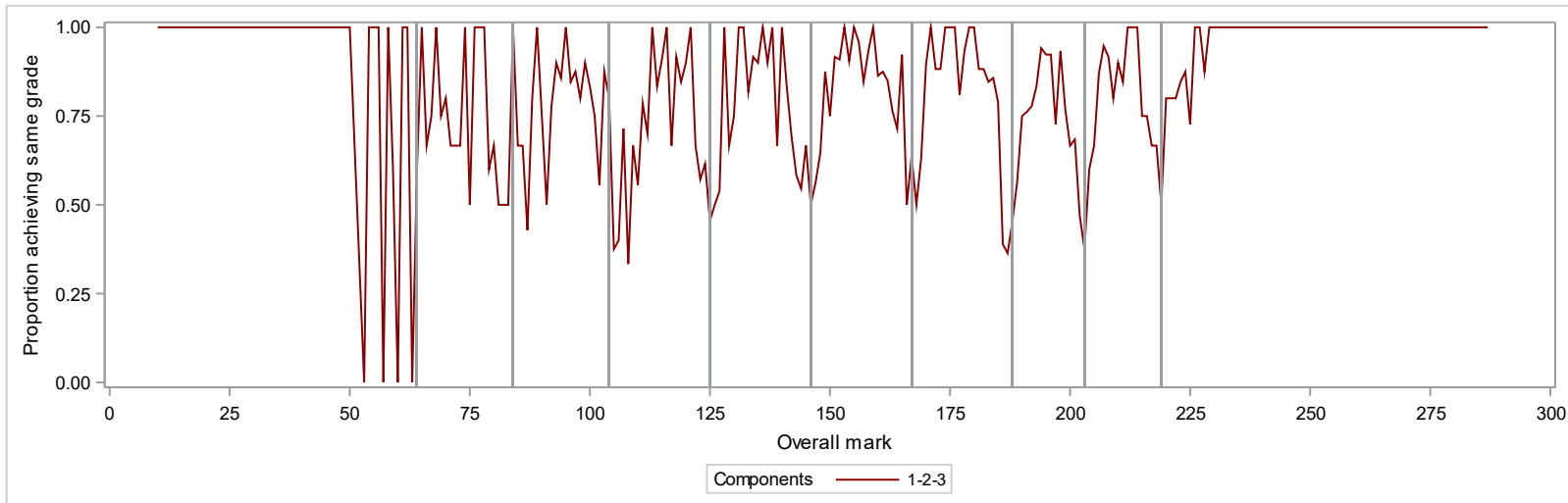
Figure 11: Grade comparison by component combination and overall mark (Combined Science B foundation tier, adjusted grade boundaries)
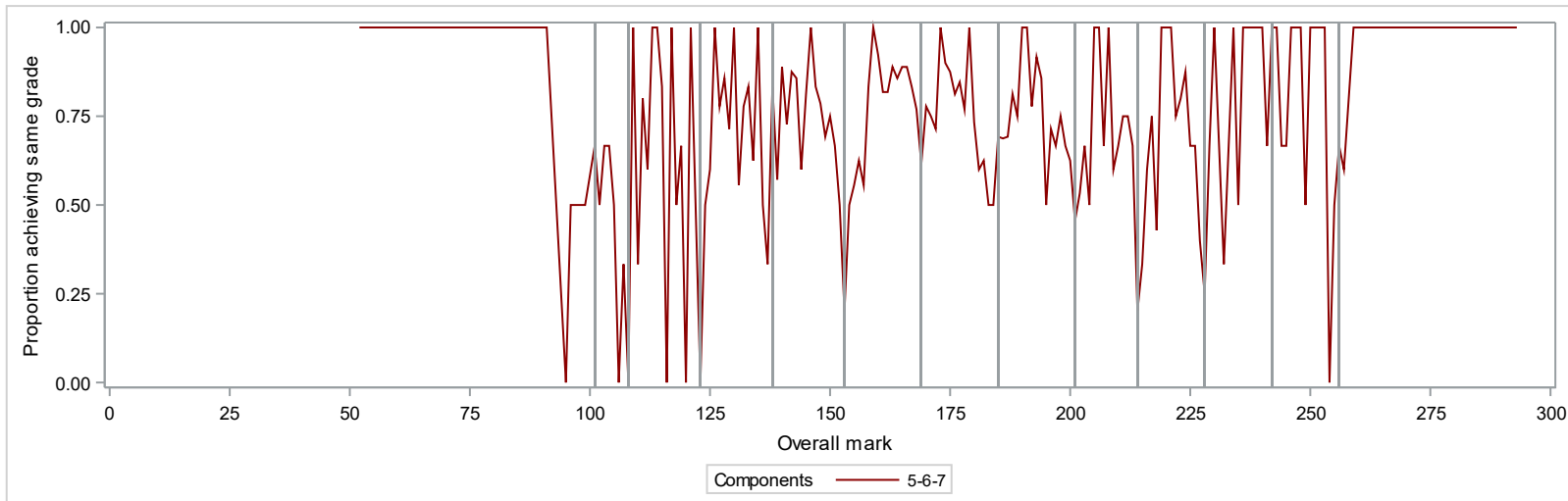

Figure 12: Grade comparison by component combination and overall mark (Combined Science B higher tier, adjusted grade boundaries)

Summary

This research investigated the impact on overall candidate grades in several GCSEs of reducing the number of components. In Maths, we found that around 85% of candidates would have received the same grade if the number of components was reduced from three to two. The percentages achieving the same grade were lower for other subjects. This may reflect the different structure of Maths, where all topics are examined in all three components. Candidate strengths and weaknesses will likely cancel out within each component and therefore performance will be quite similar between pairs of components. In other subjects, different components were more likely to examine different topics, which may lead to less consistent performance across components, and therefore more possibility of differences in grades.

It is also noticeable that the subjects with some non-examined assessment (Drama, Music, and PE) had lower percentages achieving the same grade. This is likely to be because candidates tended to get substantially higher grades in NEA than in examined components. Therefore, the component combinations which included an NEA component were more likely to give candidates higher grades than they achieved in the overall qualification.

It is reassuring that there was no evidence that any groups of students (as defined by gender or school type) would be disadvantaged by reducing the number of components. There were substantial differences in the likelihood of achieving the same grade depending on overall mark, but this was mainly due to proximity to grade boundaries.

References

Gill, T. (2020). *How reliable are component grades as predictors of qualification grades?* Cambridge Assessment Internal Research Report.