

Geography Development Day: Follow up and next steps

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1 Introduction

This document is the outcome of a development day involving staff from the Geography BScH degree programme held on 27 August 2019. The event forms part of the university’s work for the current QAA Enhancement Theme, Evidence for Enhancement: Improving the Student Experience. Teaching staff, including module leaders and the programme leader, came together with the (then) Subject Network Junior Researcher together in order to:

- Examine the pros and cons of group work
- Agree on principles and best practice concerning group work
- Plan a programme-wide approach to delivering and assessing group work

This document presents the outcomes of discussions held on the day, along with follow up work to investigate areas flagged up as requiring further research. Follow up and next steps are detailed in Section 5.

2 Spread of modes of assessment

In advance of the day, a review of the current modes of assessment within all modules in the Geography BSCH was undertaken. One of the sessions involved reviewing the mode of assessment within each module using the [Grading Group work Prompt sheet](#) and [Groupwork Framework from Dundalk Institute of Technology](#) to guide discussions. Proposals for any changes to modes of assessment or assessment loads as a result of these discussions and are shown in figure 1 below.

The biggest proposed changes were at levels 9 and 10, with more group work proposed at level 9, and a reduction of group work in level 10. This addressed student feedback concerning the high level of group work occurring at level 10 whilst having very little effect on the spread of assessment types within the programme overall.

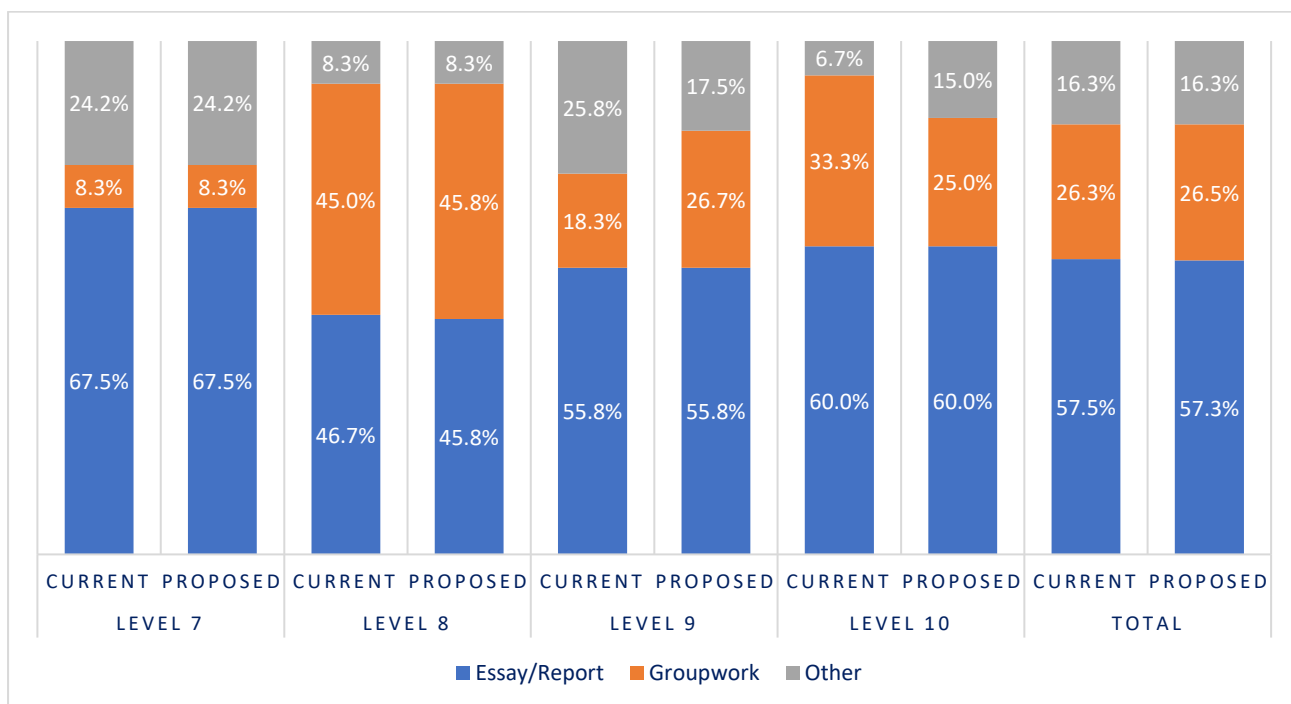


Figure 1: Current and proposed spread of modes of assessment within Geography modules, by level, and overall

3 Grading assessed group work

Much discussion on the day was given over to the grading of assessed group work. Attendees consulted a small selection of existing research and scholarship to attempt to uncover and examine principles behind this:

- Groupwork Framework:
https://www.dkit.ie/system/files/groupwork_framework_guidelines_2016.pdf
- Dealing with free riders, Maiden and Perry article:
<https://srhe.tandfonline.com/doi/full/10.1080/02602930903429302#.XRtypTB7mUk>
- Ethical considerations of groupwork, Noonan article:
<https://www.sciencedirect.com/science/article/pii/S0260691712003796>

As a result of the day's discussions, attendees felt that further research was required in this area in order for them to make an informed decision concerning the choice of a grading model. This research was undertaken (by the author of this report) and is detailed in the remainder of section 3.

3.1 Defining assessed group work

Whilst students may often work or learn with others in groups as part of their learning experience, assessed group work in this context refers specifically to those learning experiences in which:

- Students learn and work within groups or teams
- Assessment of their learning involves the creation of a product or output that is the result of the collaborative efforts of that group or team.

Thus, situations in which students *work* in groups but are then *assessed* by individually produced outputs do not constitute assessed group work in this context.

3.2 Approaches to grading group work

There are several facets to the assessing of group work which were identified on the [Grading Group work Prompt sheet](#) namely:

- What are the relevant **outputs** of group work: the product produced by the group, or also the contribution to the creation of that product through working effectively with others?
- How are we to evidence **group contribution**? Should this be done by individuals themselves (using reflective journals or blogging, for example) or can this be judged through an observation of the group working process by self- and peer-assessment?

In general, awarding the same grade to all group members based on the product or output of the group's work is perceived as very unfair by students and may also undermine personal responsibility and promote non-participation (sometime referred to as 'free-riding'). There is also some evidence to suggest that single grades may benefit students of lower ability and penalise higher-achieving students (Almond, 2009). This is reflected in student perceptions at UHI, as evidenced by the negative student feedback from Geography students (which was a catalyst for this Development Day) and elsewhere in the literature (Moore & Hampton, 2015).

An alternative approach is to award different grades for each group member through combining the group mark (for the product or output) with a mark for an individual component. There are two

main variants within this approach depending on the nature of the individual component (see Figure 2):

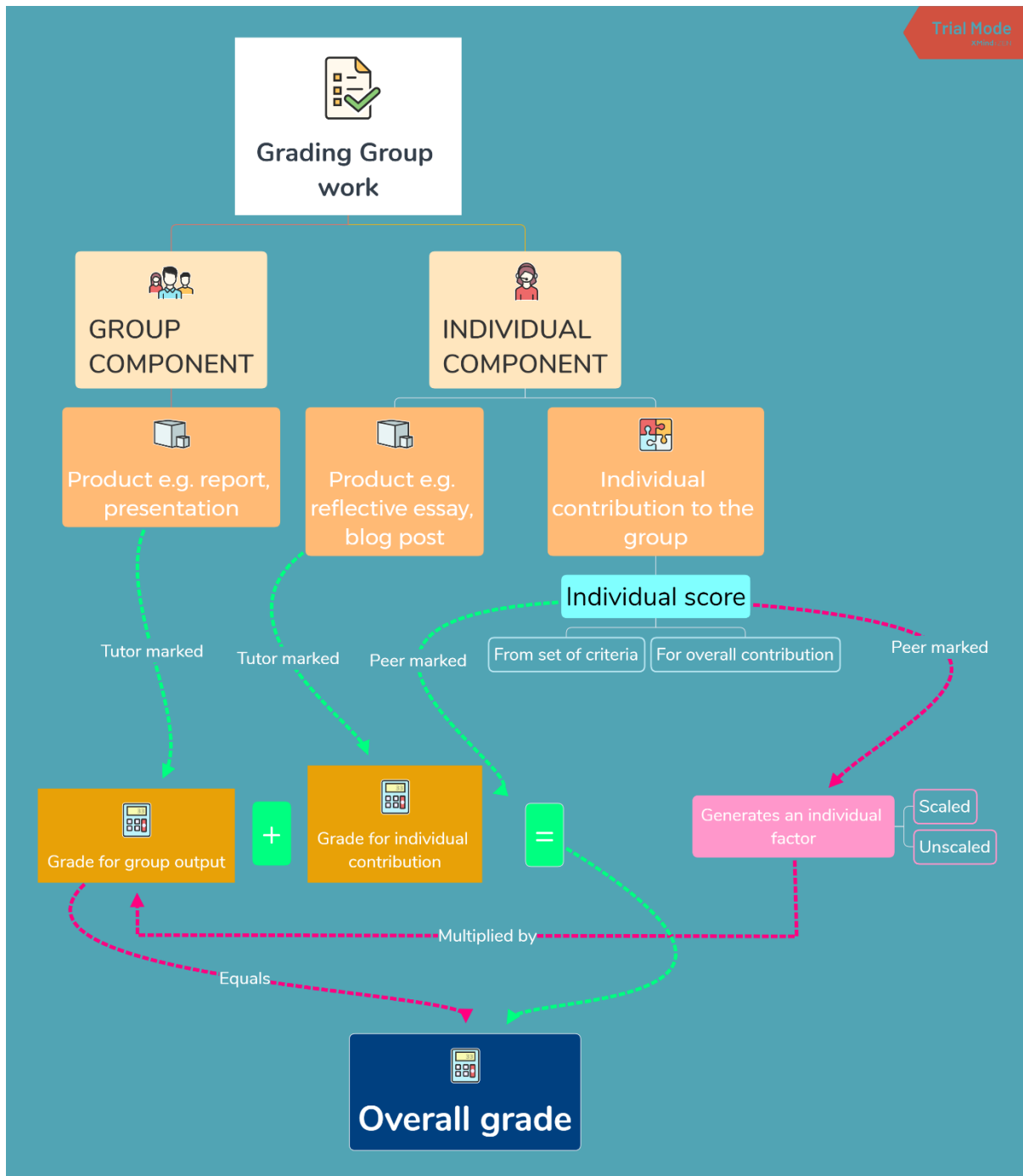


Figure 2: Models for grading group work

1. **Additional individual product.** The first variant is for each group member to submit an additional individual piece of written work in which they reflect on the process of the group work and the learning that they have taken from it. In this case both products are assessed by the lecturer/tutor and the overall grade for each student is determined by the shared grade for the group product and the individual grade for the individual product with appropriate weightings. This variant is often criticised because individuals that do not

contribute adequately to the group output can nevertheless create a high quality additional individual product and score well overall, despite this lack of contribution.

2. **Individual contribution to the group.** This variant involves each group member receiving a score based on their contribution to the group. There are several sub-variants, based on differences in:
 - a. **How the individual score is calculated** e.g. from a set of criteria (attendance at meetings, input to planning, input to final product etc.) or from a division of a pool of marks
 - b. **How this score is combined with the group score**
 - i. Multiplication by individual factor: Conversion of individual scores to an individual factor which is multiplied by the grade for the group product to yield an overall score (which may be scaled, to moderate the effect that group contribution can have on a student's overall score)
 - ii. Addition of the individual score to the group score (with appropriate weightings depending on the learning outcomes of the module/unit).

The grading of individual contribution is often preferred as it reflects intuitions about fairness that are overlooked in other approaches. However, Conway *et al.* (1993) note that under some grading models, individual marks can deviate greatly from the group mark. These are likely to grow with group size and, for approaches where individual scores are generated according to a set of criteria, as the number of these criteria on the peer assessment sheet increase. Deviations are also likely to grow as the group mark increases. This explains the existence of approaches which scale, or weight, the effect of the individual contribution on the overall mark. The rationale behind this can be given by appeal to what is fair in relation to group work:

“If effort marks are high compared to base marks, students who make a greater contribution than their fellows to a project which is skimpy or fatally flawed are likely to end up with a better mark than a lesser contributor to an outstanding project. If contribution marks are weighted highly, a subtraction procedure is likely to fail students unless they produce very good projects. On the other hand, low weighting to the effort mark could reduce its significance to the extent that students still complain that they were not rewarded for their effort” (Conway et al. 1993:47)

3.3 Modelling on real examples

Comparison between different grading models is perhaps best done in terms of concrete examples. In Table 1 below, four different approaches are modelled against a hypothetical case of group work where three students (Angela, Julie, Tom) work as a group with Angela's contribution to the group being above average and Tom's below average, and the mark awarded for the group product being 66 (Full details of how the grades have been calculated can be found in [Appendix 2](#))

Grading model	Pool of marks, unscaled	Pool of marks, scaled, 50%	Score against criteria, unscaled	Score against criteria, scaled 50%	Distribution of total group mark between individuals
Individual	(Difference from group mark shown in brackets)				Any of these 4 models
Angela	76 (+10)	71 (+5)	80 (+14)	73 (+7)	
Julie	72 (+6)	69 (+3)	74 (+8)	70 (+4)	
Tom	50 (-16)	58 (-8)	43 (-23)	55 (-9)	

Table 1: Modelling of different grading methods of hypothetical examples.

In all cases, Angela receives the highest mark and Tom the lowest mark, with deviations from the group mark ranging from -16 to +14, with those largest deviations occurring in the 'unscaled' models. Interestingly, in all cases, the four models are compatible with a simpler grading model suggested by Gibbs, Habeshaw and Habeshaw (1986) in which the total number of marks (e.g. the group mark multiplied by the number of group members) is distributed between the group members on the basis of a mutual agreement from all members that the grades reflects individuals' contributions. It may be that this more straightforward approach (perhaps with additional restrictions to limit the extent to which the individual component can effect the overall mark) is to be preferred given that it would likely be understood by all students.

4 Groupwork resources

Emerging from discussions prompted by the three preparatory pieces, was the agreement that further resources for both staff and students regarding group work were required in order to:

- Prepare students for group work
- Set out clear expectations for both staff and students
- To clearly articulate how the marks for group work would be arrived at

The lists of resources below is a starting point for this work and draws on internal resources as well as those which are freely available via Open Educational Resources. Expansion of both staff- and student-facing resources is one of the follow-up actions emerging from this Development Day.

4.1 Grading group work

- Ticklist for peer assessment of group contribution. Produced by Clarity Innovations. An Open Educational Resource that we be replicated or repurposed:
<https://www.oercommons.org/authoring/22620-peer-group-project-checklist>

4.2 Undertaking group work

- Essential Student Skills. UHI resource, editable <http://induction.uhi.ac.uk/Learning-with-us/Collaborative-learning/index.html>
- Learning Toolkit for Group work. Produced by the University of British Columbia. An Open Educational Resource that we be replicated or repurposed:
<https://www.oercommons.org/courses/learning-toolkit-group-work>
- Groups and teamwork online module. Produced by the OU. An Open Educational Resource that we be replicated or repurposed: <https://www.oercommons.org/courses/groups-and-teamwork>
- Learn Higher (“network for promoting and facilitating the development and dissemination of high quality, peer-reviewed resources for learning development in the higher education sector”) resources
 - Selection of student-facing resources about various aspects of group work:
<http://www.learnhigher.ac.uk/working-with-others/>
 - Group work video resource. A little dated and requires Adobe Flash to access
<http://archive.learnhigher.ac.uk/groupwork/>

5 Follow up actions

1. Expansion of resources
2. Evaluation of changes to the assessment patterns
3. End of module surveys- potential for addition of specific question about group work
4. Interviews with Module Leaders
5. Gathering of student views
6. Staff guidelines on the grading of group work

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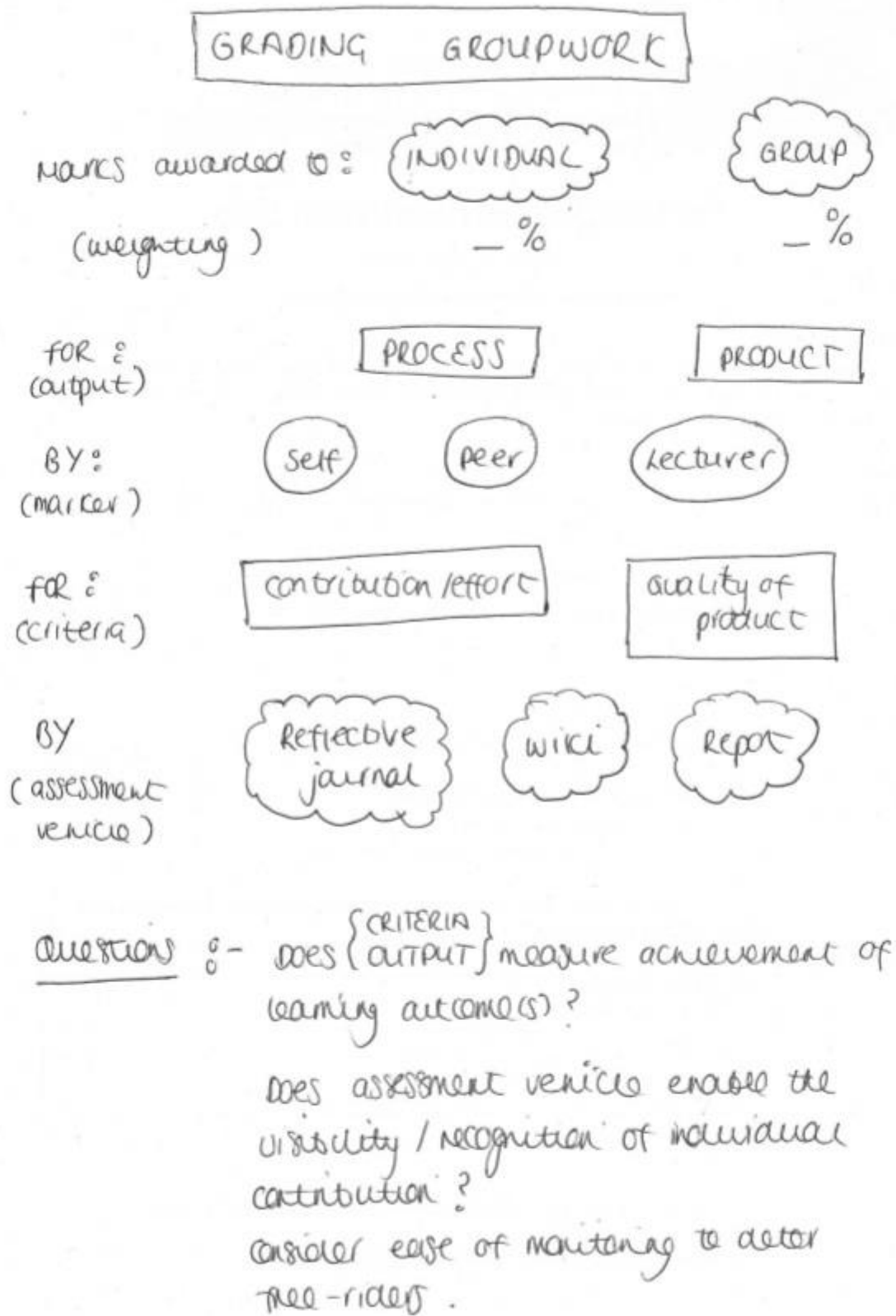
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7 Appendix 1: Grading group work prompt sheet



8 Appendix 2: Worked examples

8.1 Pool of marks

- 100 marks are available between all members of the group, and are divided up based on each student's participation in and contribution to the group work
- Cap of 8% loss or addition for a group of 3
- Cap of 6% loss or addition for group of 4
- Formula for deriving individual factor:

$$\text{Individual factor (unscaled)} = \frac{\text{Individual's share of the pool of marks} \times \text{number of people in group}}{100}$$

$$\text{Individual factor (scaled)} = (\% \text{ of group score applied to all} + (100 - \% \text{ of group score applied to all})) \times \text{individual factor}$$

Example individual	Mark for group product (e.g. presentation, report etc.)	Mark from pool of 100 for group contribution	No of students in group	Individual factor (unscaled)	Overall mark (unscaled)	Scaled individual factor	Overall mark (scaled)
Angela	66	38.3	3	1.149	76	1.0745	71
Julie	66	36.3	3	1.089	72	1.0445	69
Tom	66	25.3	3	0.759	50	0.8795	58

8.2 Score against criteria

- Marks between -1 ("a hindrance to the group in this respect") and +3 ("better than the group in this respect") are awarded to each student by themselves and their peers against various aspects of group work
- An individual's total score is the sum of all the marks given
- An average of the total scores is the sum of the individual total scores divided by the number of individuals in the group
- Formula for deriving individual factor:

$$\text{Individual factor} = \frac{\text{Individual's total score}}{\text{Average of total scores}}$$

Individual factor (scaled)= (% of group score applied to all + (100-% of group score applied to all)) x individual factor

Marks to:	Angela			Julie			Tom		
By:	Angela	Julie	Tom	Angela	Julie	Tom	Angela	Julie	Tom
Enthusiasm	2	3	2	2	2	2	1	1	1
Ideas	2	3	1	2	2	2	1	1	2
Understanding	2	2	2	2	2	3	0	2	1
Helping group function	2	1	2	1	2	2	1	1	2
Organising	2	3	3	2	2	2	1	1	1
Efficiency	2	3	2	2	2	2	1	2	1
Individual score	39			36			21		
Average score	32			32			32		
Individual factor	1.21875			1.125			0.65625		
Scaled individual factor	1.109375			1.0625			0.828125		
Group mark	66			66			66		
Overall mark (unscaled)	80			74			43		