Robust assessment of group coursework

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Introduction

Coursework can be conducted in groups rather than individually, which provides important life-skills to students (Fearon et al., 2012). However, determining each individual grade, based on the contribution for each student, is a difficult problem.

It is important that students are assessed in a fair way, because if students get:
1. a lower grade than they deserve, then it does not reflect their abilities and can lead to a reduced overall degree classification.
2. similar grades to those who do not deserve it, then it can lead to demotivation, lack of confidence in academia, the university and the way work is marked.
3. a higher grade than they deserve without putting in effort, then it rewards a poor type of behaviour that will not serve them well in their future studies and in their professional life.

An improved way of assessing groupwork has the potential to address the above issues.

Research aim

to develop a consistent, fair, accurate and defendable way of marking group coursework.

Consistent: between markers

Fair: for all students

Accurate: giving of the correct grade

Defendable: can justify the grades easily to students

Current progress stage

Methods

Approach:

Observation: adopt a module with group working and monitor pros and cons of the contribution assessment approach.

Trial 1: modify the approach to remove some of the cons and monitor outcomes (use the teaching team and student feedback).

Meet with the teaching team and staff members of the department to discuss the approach and get feedback.

Trial 2: further modify the approach based on the literature and trial 1, then test again within the module.

Formal meeting with staff members of the department to discuss the approach and record findings to be incorporated into a final approach.

Contribution table

Name	Primary Role(s)	Areas worked on	Contribution rating (0-4)

Contribution ratings (0-4)

Contribution rating	Meaning	Description
4	Full contribution	The student has contributed generally well and/or has provided a satisfactory amount of work throughout the project. A typical example would be a student that attended all or many meetings, and acted professionally throughout (e.g. was reliable enough to let people know when not attending meetings etc.) and contributed to large parts of developing the program and/or report.
3	Mid contribution	The student has done a medium amount of work throughout the project. A typical example would be a student that may not have attended/helped at all the meetings they should have attended, but was generally available and helpful. They may have taken on simpler parts of the project that did not demand a large portion of effort/diligence.
2	low contribution	The student has done the bare minimum. A typical example would be a student who has missed many meetings, not contributed when they did join, and knew very little about what was going on/what was required. Another example would be a student that turns up at the last minute (e.g. a few days before the deadline) to help and delivers something reasonable.
1	Very low contribution	The student has done very close to nothing overall. A typical example would be a student the group rarely sees over the entire time and has provided nothing substantial for the coursework. They may turn up at the last minute and provide something. They were generally a poor communicator and/or would produce very little when asked.
0	No contribution	The student has done absolutely nothing overall. A typical example would be a student the group has never seen over the entire time and has provided nothing for the coursework.

Examples of contributions include:
writing, developing (e.g. developing all/part of a diagram), reviewing (finding errors/confirming the correctness of diagrams/text), commenting on (providing suggestions for improvements), updating, merging multiple versions into one, correcting errors, programming related tasks, testing related tasks, setting up technologies, researching technologies, organising and chairing meetings (and related managerial tasks), integrating code/technologies, designing and architecting components/the system.

Literature and findings so far

Following the standard advice, I have included both self- and peer-assessment of individual contribution levels to the group work (Johnston and Miles, 2004; Nordberg, 2006). In addition to a numerical rating, this must also be backed up with a description of what has been done.

In contrast to Johnston and Miles (2004), the observation and Trial 1 found that using only a rating score is not enough to counter the problem of defensibility. i.e. it is not always justifiable why certain scores have been given to individuals. Moreover, it also found that group members that are not engaged give other group members (who were also not engaged) arbitrary high scores. The addition of the description requires the justification of a score and hence aims to avoid this problem. This aligns with the advice of Dijkstra et al. (2016), who state that it is important to also include decisions about how to weigh assessment of the product, and hence the description elicits the parts of the product that the students have contributed to. The hope is that this will allow judgement of strong students who contributed to developing strong sections that should not get "pulled-down" by very weak sections of the product and vice versa.

It is also important to define the concept of contribution well (Dijkstra et al., 2016), and therefore various descriptions of what counts as contributions have been added to the overall contribution approach being tested.

Results & Conclusions

1. Simple numerical scores of contribution are a very limited way of measuring contribution and lead to accuracy and defensibility problems.
2. Contributions must be clearly and well-defined for students to provide sensible ratings.
3. Further research is required to determine the effectiveness of the inclusion of a description to go with the numerical rating of contribution.

References

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