Solving the group project assessment quandary: Can the instructor's equal partitioning of each group's topic be the solution?

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Abstract

Team work is one of the generic skills that undergraduate students are expected to acquire by the time they graduate. Nevertheless, the traditional method of assessing group projects has been – in addition to its other shortcomings – sadly inaccurate in measuring individual students' contributions to the project. In this paper, I present a new technique for allocating group project topics and for assessing such projects, whereby the instructor – *not* the students in each group – divides each topic into several sub-topics, to accord with the number of students allocated to each group. The new technique also obliges group members individually to upload their parts in the project to their own accounts on Turnitin, rather than jointly uploading the whole project to one account, as had previously been the case. From my perspective, the new method has to date been very successful as it addresses the shortcomings – in terms of accuracy and justice – of the traditional assessment of group projects. The attitudes of students to the new methodology have also been very positive, as evident from the results of a questionnaire distributed among the students. The methodology does, however, have various limitations, the most significant of which are the incremental time and effort demanded of the instructor.

Keywords: undergraduate teaching, group project assessment, pedagogy

1. Introduction

Team work is one of the generic skills that undergraduate students are expected to acquire by the time they graduate. Seldom is there any contemporary invention, innovation or even upgraded technique that is accomplished solely by an individual. The unprecedented rate of proliferation of knowledge – not to mention the interdisciplinary interaction underlying any new progress in science and technology – has demanded that researchers work together, whether they themselves like it or not. Most undergraduate modules consequently require students to collaborate in producing group projects. The traditional methodology – which I and many of my colleagues have previously used – allowed students a) to select a topic of their own choice or undertake one suggested by the instructor and b) to divide the research load among themselves as they wished. They would then upload their project on Turnitin and, after that, present their work to the instructor. Their presentations, together with their responses to their instructor's questions, would reveal their understanding of the material.

Experience over many years has confirmed for me that this traditional method of allocating group projects to students has various shortcomings, the most striking of which is perceived inaccuracy in the assessment of individual contributions to the project. Conventionally, instructors sought, during presentations, to determine individual contributions, but the

students – especially if members of the group were friends – would commonly say "We all worked together", in order to assure themselves of equal reward. Whilst presentation of the work would reveal general understanding of the research, it would not precisely indicate each student's effort and contribution to the writing of the paper, for the most able members of the team would, prior to the presentations, coach their fellows on the key ideas and results – a strategy perhaps arguably beneficial to group learning, but not to the just allocation of marks! A further weakness of the traditional group project method lay in the delegation to the students themselves of group workload distribution, which, as it was often arbitrary, led to inequalities in contribution.

I thus decided to revise the method: The instructor would divide the topic into sub-topics – to accord with the number of students allocated to each group – as a more equal division of labour; the students would be required individually to upload their parts in the project to their own accounts on Turnitin.

This research paper aims to demonstrate the impact of this new group project methodology – in both managing the projects and addressing identified assessment challenges in them – from both my own perspective and that of the students. The paper briefly reviews the literature on assessing group projects, highlights the new technique and the methodology used to evaluate its efficacy, discusses and analyses the results (with a comparison of the traditional and new approaches) and concludes by shedding light on the limitations of the new technique.

2. Are assessment techniques employed in group projects accurate and just? A review of the literature

Assessment usually falls into four types: self, peer, tutor or other (e.g. by members of another class). How many of them are deployed, however, depends on the context. In the case of group projects, there may be many variations of 'other', as, for example, individuals may evaluate other group members or groups may assess other groups. The number of types deployed may also depend on whether they are applied to formative or summative assessments (Nordberg, 2006).

Brown *et al.* (1997) propose a variety of group assessment techniques, such as:

1. The same mark is given to all group members.
2. The mark of each team member is decided by the group at the end of the project.
3. The criteria upon which the marks are allocated are decided by the group at the beginning of the project, whilst marks are allocated at the end.
4. The group allocates the role of each member and the criteria upon which each role is assessed, whilst marks are allocated at the end.
5. Each group member contributes equally to each task. The group decides together the marks given to each member. Those with minimal contribution get low marks whilst those who have contributed extensively get higher marks.
6. The instructor and the group use any one of 2-5.
7. The instructor only does any one of 2-5.
8. Each team member delivers an oral presentation.
9. The mark of each team member is a combination of both an individual mark and a project mark.

10. All group members receive the same marks. However, if a group member is a timewaster, s/he has ten percent of the mark deducted (yellow card) and, if s/he does not improve by the end, s/he receives a zero mark (red card)
11. All group members receive the same marks. However, a remarkable contributor receives additional marks.

For evaluating group projects, Kuisma (2007) proposes portfolio assessment, which demands that students reflect on their learning experience; consequently, the instructor can assess the individual student's learning in group tasks.

Nevertheless, despite the existence of a plethora of assessment techniques, absolute fairness in assessing individual contributions to a group project remains elusive, mainly because most of the techniques involved depend on self- or peer-evaluations of group members to moderate the tutor's assessment. According to studies over the last two decades, self- and peer-evaluation both suffer from various biases.

One of the very early studies is the survey by Humphreys *et al.* (1997), which concludes that students are not very enthusiastic about peer assessment and prefer, although by a narrow margin, not to be evaluated by their peers. Students also find it very challenging to be critical when evaluating their peers' essays. Another early study by Miller *et al.*(1998) asserts that students' self- or peer-assessment can be a useful tool in the assessment of group projects, since members of a group know better than an outsider what each member has done. Although this might mean undermining the assessment role of the tutor, it represents a means of moderation for the unequal performance of group members**.** However, self- and peer-assessment are confronted by challenges: students may tend to overestimate or underestimate their own or their colleagues' marks; self- and peer-assessment still do not resolve the issue of how to assess unequal contributions by group members (Miller *et al., op.cit.*). Other studies have acknowledged the learning benefits to the students of self- and peer-assessment, but have admitted that the technique does impose an additional work load on both students and tutors (Hanaran and Isaacs, 2001).

Later studies, from the beginning of the new millennium, also refer to the fact that students may be less convinced about the worth of peer-assessment evaluation in group projects. For example, a survey – in the form of a questionnaire – was distributed to students on two postgraduate business modules at London Metropolitan University, to investigate how they perceived justice in the assessment of group projects. The two modules chosen for the survey employed contrasting assessment techniques. In the first module, the project accounted for 60% of the total subject marks, with 30% allocated to the group presentation and the other 30% to an individual critical review. In the second module, the group project accounted for 40% of the total subject marks. Students were assessed on the basis of one written report, part of which was a compulsory evaluation of the contribution of each member in the group by each member. It was not apparent to the students whether their assessment would be taken – by the instructor allocating the marks – as unquestionable or only as advisory. The majority of the responses to the questionnaire showed overall satisfaction with what group projects had to offer in relation to learning and employability, but students were less certain about the fairness of assessment of group projects (Nordberg, 2008).

Russell *et al.* (2006) attempted to resolve the issue of unequal contributions using a new algorithm, in which members of a team provided percentage scores for themselves and for

other students' contributions in the group project. In addition, they gave a percentage score for the project as a whole. The mean score for each student and that for each group were then calculated. The two values were then compared. Any deviation between the mean score of the student and that of the group would result in a negative value (under-contribution of the student) or a positive value (over-contribution of the student). The difference in the scores could be used by the tutor to moderate the group mark and change it to an individual mark for each member. This was done by multiplying the difference by a 'Phase Weighting Factor' – the relative contribution (as a proportion) that the member's work made to the final grade. Zhang and Ohland (2009) also proposed four methodologies using weighing factors. The weighing system built on the differences between peer-rating and self-rating to adjust the group grade. From the four methods suggested, the authors recommended adjustment using the *between-group* and the *within-group* methodologies (Zhang and Ohland, *op.cit.*). Nevertheless, the main problem remained – that students tended to inflate their scores (Russell *et al*, 2006).

Kennedy (2006) confirmed this conclusion, as the results of his case study proved that peer-assessment marks did not differ significantly from the tutor's equal allocation of marks to all group members, because students were reluctant to be 'judgemental' in assessing each other. Furthermore, in many cases, peer-assessment resulted in raising tensions between group members rather than fostering team work – and many studies corroborate this. As for self-assessment, students in a study confessed that it was impossible for them to be objective when assessing their own work (Lindblom-ylanne *et al.*, 2006).

Williams' very recent study (2017) reiterates previous approaches of combining tutor-, self- and peer-assessments to allocate individual grades in group projects. Students provide self-evaluation, shedding light on the process of group work, while the teacher alone sets a mark for the whole group and/or the product. The two scores are then combined to produce an individual score for each member. Furthermore, the teacher makes use of qualitative (i.e. without scores) peer-based evaluation and wiki logs, the better to monitor the process. Nevertheless, this author admits that there are no flawless methods in assessing group projects, as assessment is inherently subjective. Despite its contemporaneity, the study also does not provide explicit answers to questions of bias in peer evaluation or of overestimation in self-evaluation.

Inaccurate assessment of individuals' contributions to group projects – something partially moderated by self- and peer-assessment – can, in extreme cases, manifest itself as the 'free-rider' problem, yet another challenge to the assessment of group projects. Brooks and Ammons (2003) recognise the problem of free-riders in group projects – i.e. when some members of the group do not do their share of the work and then receive marks they do not deserve. These authors believe that the answer to understanding fully the contribution of each member lies in peer-assessment by students in the group. However, unlike previous studies, which advised instructors to carry out peer-assessment by the end of the semester, Brooks and Ammons present an assessment instrument which features early achievements, multiple assessment points and the use of specific assessment criteria. Their evaluation, tested on 330 undergraduate business students and designed primarily for an introductory business module, was conducted three times every semester. The evaluation package required each student independently to assess every other member in the group, by responding to a number of evaluation criteria in addition to providing a mark for the

member's contribution and an overall feedback. Results of the regression model proved that students perceived that early, multiple and specific peer-evaluations did alleviate the free-rider problem (Brooks and Ammons, *op.cit.*). I do feel, however, that, though the evaluation package employed in this study may have helped to counter the free-rider problem, it does not fully address the challenge of achieving accuracy and justice in the assessment of group projects.

In addition to the above-mentioned shortcomings of the various techniques used in group project assessment, such techniques do not tackle the problem of plagiarism by some – if not all – members. A final disadvantage, mentioned by Biggs and Tang (2011), is that some students focus on some tasks they are good at and do not fully comprehend how the other various sections have contributed to the final project.

It is worth noting that some previous studies have referred to the idea of the instructor's specifying tasks for the students in collaborative work. According to Johnson *et al.* (2014, as cited in Brame and Biel, 2015), one of the main strategies for successful collaborative learning is that the instructor designates specific roles for the students in the group, such as manager, conciliator or educator. However, this approach is different from ours, as it specifies team tasks rather than specific research tasks to be carried out by the group members; it therefore does not equally divide between the students the *academic* research writing load.

3. A proposed new methodology: the instructor's partitioning of group projects for allocating sub-topics and assessing students

3.1. Splitting the topics into subtopics

The new method proposed in this paper entails the instructor's partitioning of each general topic into several subtopics, in accordance with the number of students allocated to each group. In addition, the new technique obliges group members individually to upload their part in the project to their own accounts on Turnitin, so that the instructor can clearly gauge the exact contribution of each group member in terms of analysis, word count and plagiarism. For example, one of the topics included for the group projects in the Money and Banking module in the fall 2017 semester dealt with the International Monetary Fund (IMF) loan provided to Egypt. This topic was divided into three subtopics: the advantages Egypt reaps from the loan; the disadvantages it incurs; other countries' previous experiences with IMF loans. In the guidelines, all three subtopics appeared under the broad topic title, but were preceded by 'Student 1', 'Student 2' and 'Student 3'. The three members of the team could still exercise choice in allocating the subtopics among themselves. After finishing their parts, students uploaded their respective parts to their own Turnitin account. As a result, I could clearly identify the exact contribution of each member in terms of analysis, the number of words written and the Turnitin similarity percentage.

Both the introduction and the conclusion were produced by the collaboration of all three members. Both had a size limitation and the conclusion, rather than repeat the whole paper, had to highlight the main findings. To use the previous example about the IMF loan, the conclusion was expected to include recommendations as to how Egypt could maximise the advantages to be reaped from the loan and minimise any disadvantages on the basis of the comparative experiences of successful countries. As the conclusion would stem from the

sub-topics I had arbitrarily included in the general topic, opportunity for plagiarism would be very unlikely and I therefore did not require it to be uploaded on Turnitin.

3.2 Modifying the feedback templates

All other conditions for the group project were clearly defined in the guidelines, including dates for the submission of formative tasks: outlines and first drafts, recommended number of words, useful websites, referencing style, assessment criteria (rubric) etc. The feedback forms for the first draft and the final drafts were also modified, to account for the new method by incorporating new blank spaces for the Turnitin percentage and the number of words written by each member of the group.

Reflection on the new technique necessitated evaluating it, not only through my lens but also through that of my students (Brookfield, 1995). In order to do this, I distributed among the students of my class a questionnaire asking them five main questions concerning their attitudes to the new method (see Appendix A).The prime intention of these questions was to investigate whether the new method had addressed previous students' concerns about group projects, especially those relating to the instructor's fairness in assessing their work within the group, the equal distribution of the workload among group members and the added value of their collaboration in a group. The results of the questionnaire appear in the following section.

4. Discussion and analysis of the data

4.1. Instructor's view

From my perspective, the new method was very successful, as it addressed the shortcomings of the traditional group projects in terms both of accuracy and justice of assessment. Specifically, the new technique addressed six main shortcomings:

4.1.1. Shortcoming 1: Rewarding dishonest students

Sometimes, the traditional methodology permitted a dishonest student to pass the project when s/he in fact deserved to fail. For example, were the instructor to have set a maximum score of 15% in Turnitin for the paper to pass, if the honest student's part scored 0% and the dishonest student's part scored 30%, the paper's average would become 15% and thus the project would pass… and so would the dishonest student! The new technique obliges group members individually to upload their parts in the project to their own accounts on Turnitin. Plagiarism assessment is based on her/his part only and the dishonest student therefore never passes the project.

4.1.2. Shortcoming 2: Penalising honest students

Sometimes the traditional methodology may have led honest students to fail the project when they actually deserved to pass. For example, were the instructor to have set a maximum score of 15% in Turnitin for the paper to pass, if the honest student's part scored 15% and the dishonest student's part scored 35%, the paper's average would become 25% and thus the project would fail… and so would the honest student! The new technique requires group members individually to upload their parts in the project to their own accounts

on Turnitin. Plagiarism assessment is based on her/his part only and the honest student therefore never fails the project on this aspect.

4.1.3. Shortcoming 3: Rewarding weak students

Traditional methodology may also have led to over-estimation of the performance of weak students who acted as free riders or made only minor contributions to the project. Since their parts were intermingled with those of the clever students, their individual contributions were not apparent to the instructor, even after presentations of projects. Under the revised method, by uploading her/his own part to her/his personal Turnitin account, the weak student reveals the true nature of her/his contribution in terms not only of plagiarism, but also of the limited number of words and of shallowness of analysis. The mark in this case is low, as a true reflection of poor participation.

4.1.4. Shortcoming 4: Penalising clever students

Traditional methodology may have led to under-estimation of the performance of clever students whose contributions to a project were excellent. Since their parts were intermingled with those of the weak students, the extent of their contributions was not apparent to the instructor and they may have been under-assessed. Under the revised method, by uploading her/his own part to her/his personal Turnitin account, the strong student demonstrates the true nature of her/his contribution in terms not only of absence of plagiarism, but also of an appropriate number of words and of depth of analysis. The mark in this case is high, as a true reflection of committed participation.

4.1.5. Shortcoming 5: Limiting students' learning from research

Traditional methodology allowed students so to divide the project among themselves that academic learning to an equal level for all participants would be hindered. For example, students usually divided three-grouped projects into the – to them – the most obvious three parts – introduction, body and conclusion – with each participant responsible for one of those unequal parts. A student whose only effort was to write a brief introduction to the project would therefore benefit little from the research. Under the revised method, the instructor's partitioning of topics into equally-important subtopics enables students to work on important issues that merit investigative research and enhances each student's knowledge and skills. Since all three students are collaboratively responsible for the entire document, the new approach guarantees participant knowledge about, and understanding of, the whole project and its outcomes; in consequence, they benefit much more equally from their research.

4.1.6. Shortcoming 6: Inequitable distribution of research effort

Not only does an unequal division of the research load by the students prevent their learning equally from their research; it also leads to inequalities in the effort and contribution of group members. For example, if all students are strong and they do their unequally-weighted parts excellently, they will all be rewarded with the same marks, even if some students have had to make double the effort of others; thus, though there may be justice in the marking, there occurs injustice in the unfair distribution of the workload. With the new methodology, the instructor deliberately creates subtopics of fairly equal load and thus ensures an equal distribution of required effort.

From my perspective, and by overcoming all these shortcomings, the new approach has proved to be superior to the traditional group project method: the students' complaints of injustice have been minimised and the likelihood of assessment accuracy maximised.

Previously, I used to receive complaints from students that the high plagiarism percentage was not their fault as the copied part in the paper belonged to another group member. Such a student would bring me the Turnitin copy as evidence. However, later on, her/his colleague would claim the opposite! Parts were usually so intermingled that I could not confidently discriminate between them to deduce the identity of the culprit. Now, I can be certain of identifying the plagiarist.

As for assessment accuracy, I can confidently apply the criteria to the part of each student (see the final project feedback form in Appendix B) without fearing that I have over-estimated or under-estimated the performance of any student. On several occasions after my deployment of the new approach, two of three group members scored well, whilst the third had low marks or failed when the Turnitin percentage was extremely high. The two high-performing students' marks were certainly adversely affected by the weak third part, but not to a damaging degree: the students did not fail and thus did not have to bear their colleague's fault.

4.2. Students' views

In order to quantify the impact of the new methodology on student satisfaction, I distributed the previously-mentioned questionnaire to my Money and Banking students in a lecture in fall 2017 (See Appendix A). Out of fifty-four students registered, forty-four were attending the class that day and responded to each question with one of five possible choices: strongly agree, agree, undecided, disagree and strongly disagree. Each response was coded as follows:

- Strongly agree = 5
- Agree = 4
- Undecided = 3
- Disagree = 2
- Strongly disagree = 1

4.2.1 Results of the questionnaire:

The results of the questionnaire appear in Table 1. As evident from the table, 91% of the respondents agreed that the new method was more efficient in reflecting their contribution to the project (Question 1), while 77% agreed that it was more conducive to a fairer mark (Question 2). Moreover, 86% agreed that both being assigned a specific sub-topic and collaborating together in writing the introduction and conclusion improved the learning outcomes of the project (Questions 3 and 4). Finally, 89% believed that the new methodology was superior to the traditional methodology in fairly distributing the workload among the students. The average scores of each question (last column in Table 1) were also very high, with a maximum score of 4.4 for Question 1 and a minimum score of 3.9 for Question 2.
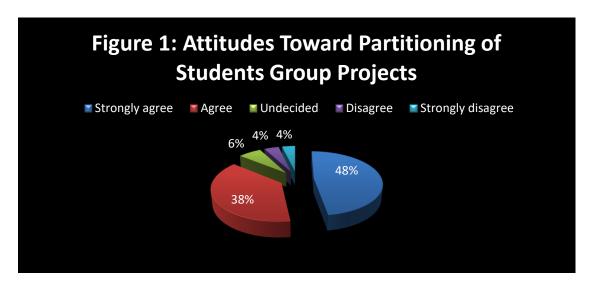
Table 1. Attitudes toward partitioning group topics

Question	Response	No.	Percentage	Average.
1. Do you agree that <u>dividing each topic into subtopics,</u> where each student is responsible for finishing a clearly-defined sub-topic, and uploading her/his part on her/his own Turnitin account <u>was better in reflecting your own contribution</u>, compared to the old methodology where you were assigned a general topic, and where the part of each student was not clearly apparent to the instructor?	Strongly agree	25	56.8%	4.4
	Agree	15	34.1%	
	Undecided	2	4.5%	
	Disagree	0	0%	
	Strongly Disagree	2	4.5%	
2. Do you agree that uploading <u>your part of the project to your own</u> Turnitin account <u>was better in giving you a fairer and more just mark</u> as it decreased your chances of being wrongly accused of plagiarism, compared to the old methodology which asked all students to upload the whole project to one member's account and their Turnitin percentage score was an average of all students' percentages?	Strongly agree	18	40.9%	3.9
	Agree	16	36.4%	
	Undecided	2	4.5%%	
	Disagree	3	6.8%%	
	Strongly Disagree	5	11.4%	
3. Do you agree that <u>dividing the topic into subtopics related to important aspects of the topic improved your learning outcomes from the project</u>, compared to the old methodology when you sometimes worked on unimportant aspects, such as the introduction alone, which resulted from letting students themselves divide the topic?	Strongly agree	18	40.9%	4.2
	Agree	20	45.4%	
	Undecided	5	11.4%	
	Disagree	1	2.3%	
	Strongly Disagree	0	0%	
4. Do you agree that <u>the writing of the results and conclusion together by all team members improved your learning outcomes from the projects</u> by discussing the contributions of other team members before reaching a final	Strongly agree	23	52.3%	4.3
	Agree	15	34.1%	
	Undecided	3	6.8%	

conclusion for the whole paper, compared to the old methodology, when sometimes only one student was responsible for writing the conclusion?	Disagree	3	6.8%	
	Strongly Disagree	0	0%	
5. Do you agree that <u>dividing the topic into subtopics fairly distributed the work load</u> among the group members so that all members shared with an equal effort, compared to the old methodology when students themselves divided the work load, so that one student might do the bulk of the work while others might do nothing?	Strongly agree	24	54.5%	4.3
	Agree	15	34.1%	
	Undecided	2	4.5%	
	Disagree	2	4.5%^	
	Strongly disagree	1	2.3%	

Source: Survey conducted among students enrolled in my *Money and Banking Module* during Fall 2017. The average score for each question was calculated by going through each respondent's questionnaire and adding in the following codes: Strongly agree=5; Agree=4; Undecided=3; Disagree=2; Strongly disagree=1.

These extremely encouraging results can also be seen in Figure 1, which depicts students' positive attitudes towards the new methodology after aggregation of their responses to all questions. As evident from the figure, the percentage of the strongly-agreed and agreed responses amounted to 86%, whilst the strongly-disagreed and disagreed responses amounted to 8%. The remaining 6% of the responses came from students who were unable to decide.

Figure 1: Attitudes Toward Partitioning of Students Group Projects

Legend: Strongly agree, Agree, Undecided, Disagree, Strongly disagree

48% / 38% / 6% / 4% / 4%

Source: Survey conducted among students enrolled in my *Money and Banking Module* during fall 2017. The average score for each question was calculated by going through each respondent's questionnaire and adding in the following codes: Strongly agree=5; Agree=4; Undecided=3; Disagree=2; Strongly disagree=1. The figure pertains to the total respondents' answers to all questions.

5. Conclusion and limitations

This paper has expounded a new technique for assessing group projects. From my perspective, the new method proved to be very successful since: a) the likelihood of accuracy of marking was maximised, as each student's analysis was clear to the instructor from her/his account on Turnitin – thus no performances of excellent students were under-estimated nor those of weak students over-estimated; b) the likelihood of injustice to students was minimised, as the group members' similarity percentages were clear to the instructor from their accounts on Turnitin – thus no honest student failed and no dishonest student passed; c) students' chances of achieving the learning outcomes from the project were maximised, as all students tackled only significant aspects of the research; d) equality in the distribution of the workload was achieved, as no single student carried the bulk of the load whilst others shared minimally or acted as free riders.

The new approach improves accuracy in assessing group projects and has demonstrably-enhanced impact on the development of students' team-work skills. Upon finishing their parts, students have to sit together and discuss the results of each section to arrive at the main conclusion or finding of the research. This is by no means an easy task, as most of the topics I assign are debatable issues which encompass different perspectives. Arriving at a conclusion is likely to entail detailed discussions among peers, and – in many cases – re-editing of the various parts to align the analysis in the text with the conclusion.

Although the new method fosters accuracy and justice in the assessment of group projects, it does have limitations, the most significant of which is the incremental effort and time demanded of the instructor. The limitations may be summarised as follows:

1. Time spent by the instructor in thinking of topics and sub-topics for each project in each module. Before the semester starts, the instructor has to spend many hours selecting topics and dividing them into sub-topics of equal weight. This limitation becomes more intense as classes continue to grow in size and the instructor has to extend the list of topics so that no topic is too frequently repeated.

2. Some topics are not easily divisible. For example, some topics may lend themselves to one student only, as they are naturally indivisible. Take, for example, the following topic: 'Critically analyse the contributions of Leon Walras to economics.' This topic entails a critical evaluation of all of the more than thirty works of Walras and it can be done by a student who takes charge of brief critical reviews of all these works. Alternatively, adapting this topic to the new approach means dividing the more than thirty works between the three students by specifying – in the topic's title – ten equally-difficult works for each student to review. This is an extremely time-consuming task for the instructor. More importantly, this division might not be the best way of analysing this topic, for the student(s) may think of a better way to structure the paper. For cases like this, the best decision is to exclude that topic from the assigned list of topics or redraft the topic to render it divisible between three students. In this case, comparing Walras with two other economists on a specific issue in economics (where each student will be in charge of one economist) may help to fit the topic to the new approach.

3. If two students cannot find a third partner for a partitioned three-part project, they will be jointly responsible for the third part. In this case, the instructor has to re-divide the third sub-topic between the two students, each of whom will upload half the additional part – together with her/his initial part – to her/his Turnitin account. The reason for this is that, if the instructor does not divide the third sub-topic, the analysis in the paper will be weaker compared to other papers on the same topic, thus complicating assessment. To have to do this further reallocation also adds to the time and effort imposed on the instructor.

4. Effort and time spent by the instructor on opening all these Turnitin accounts, which have increased by a multiple of three (in the case of a three-part group project).

5. Relating which accounts belong to which group project is another tedious and time-consuming task, especially if the number of students in the class is large.

Despite its limitations, I have currently employed this methodology for the second consecutive year for the Money and Banking module, as it was successful in solving the group project assessment quandary. In fact, this methodology suits classes which comprise students of various academic standards and from different disciplines (such as the previously-mentioned class, which includes accounting and economics students). It is also suitable for classes where students are relatively less trained in writing long papers, for structuring the paper may help students find relevant ideas. To sum up, the new approach discussed in this paper may be suitable to some – but not all – group projects. The following are some cases where the new approach might be applicable:

1. Classes that comprise academically-heterogeneous students, where wide differences in academic standards may harm the good students or reward the poor ones.
2. Classes where students are relatively less trained in writing long research papers.
3. Moderately-sized classes, since having to compile the various texts from the various accounts which pertain to the same group is extremely tiresome and time-consuming for the instructor.
4. Topics which can be divisible and easily partitioned between students.
5. Group projects which are mainly focused on research and writing skills, rather than on a combination of miscellaneous skills (such as artefacts or film production).

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Appendix A

Questionnaire

1. Do you agree that dividing each topic into sub-topics, where each student is responsible for finishing a clearly defined sub-topic and uploading her/his part on her/his own Turnitin account was better in reflecting your own contribution, compared to the old methodology where you were assigned a general topic, and where the part of each student was not clearly apparent to the instructor?

Strongly agree	Agree	Undecided	Disagree	Strongly disagree

2. Do you agree that uploading <u>your part of the project on your own</u> Turnitin account <u>was better in giving you a fairer and more just mark</u> as it decreased your chances of being wrongly accused of plagiarism, compared to the old methodology which asked all students to upload the whole project from one member's account and her/his Turnitin percentage score was an average of all students' percentages?

Strongly agree	Agree	Undecided	Disagree	Strongly disagree

3. Do you agree that <u>dividing the topic into subtopics related to important aspects of the topic improved your learning outcomes from the project</u>, compared to the old methodology when you sometimes worked on unimportant aspects, such as the introduction alone, which resulted from letting students themselves divide the topic?

Strongly agree	Agree	Undecided	Disagree	Strongly disagree

4. Do you agree that writing the <u>results and conclusion together by all team members improved your learning outcomes from the projects</u> by discussing the contributions of other team members before reaching a final conclusion for the whole paper, compared to the old methodology when sometimes one student was responsible for writing the conclusion?

Strongly agree	Agree	Undecided	Disagree	Strongly disagree

5. Do you agree that <u>dividing the topic into subtopics fairly distributed the workload</u> among the group members so that all members share with an equal effort, compared to the old methodology when students themselves divided the work load, so that one student might do the bulk of the work while others might do nothing?

Strongly agree	Agree	Undecided	Disagree	Strongly disagree

Appendix B

Final Project Feedback

Module Code-----------------Module Title--
Assignment Title--Semester---

	Name	Name	Name	
General information				
Turnitin percentage (maximum)				15%
Word count (minimum)				3500
Assessment Criteria				
Research				**70%**
Title page				1%
Introduction				2%
Thesis / Research Objective				2%
Analysis				30%
Conclusion				5%
In-text citation				5%
References (end-of-text citation)				10%
Bibliography and sources				5 %
Length requirements				5 %
Language and style				5%
Presentation				**30%**
Explanation of research				15 %
Use of power points				10 %

Presentation skills (eye contact, loud voice, body language, etc.)				5 %
First marker final mark				100%
Second marker final mark				100%
Final mark				**100%**
Other strengths				
Other weaknesses				
Advice on improving future performance				