

Mark Maximising in a Context of Uncertain Contribution: a Grounded Theory in Progress

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Graduates in the United Kingdom are expected to possess professional skills fitting them for a successful transition to paid work. Employers tend to value student attributes such as communication skills, initiative and the ability to work well with others. Assessed group work at university has been seen as a way of promoting these skills and qualities, however it is not always popular with students, who can experience problems when working together.

This practical study is intended to better understand 'what is going on' (Glaser, 1998, p.5) for students in order to inform practice. The substantive population comprises computing students and the substantive area of interest is assessed group work where marks contribute to the classification of the final higher educational award. The analysis to date has produced the shape of a grounded theory but further work is required to understand more about the students' behaviours and we plan to continue the study from October, 2017 to both update and densify the study. A literature review has yet to be conducted, and, as is consistent with the grounded theory method, will be conducted once we are secure in our updated theory.

A study about risk to marks

Glaser states that a grounded theory is a study about a concept (2010): this grounded theory is a study about risk: structural and procedural risk to marks. It emerged from analysis that students are mark driven: the higher the value of marks, the greater the contribution these marks make to a student's final degree class, the greater the student's propensity to contribute effort to the assessment. Students prioritise work according to its value, where the currency is assessed marks.

It further emerged that the main problem facing students undertaking group work is not how hard they work but whether the members of their group will contribute both the time and the mental energy (effort) appropriate to produce the required output. Students are concerned with the uncertainty of contribution and the concomitant risk to their marks and their final degree classification. Our current understanding is that students process this concern using mark maximising behaviours, which mitigate or increase the risk to marks, whilst operating in a context of uncertain contribution, under conditions of assessed group work, where their behaviours are contingent upon group composition. Student behaviours covary according to the perceived risk and the consequence of mark maximising behaviours is a student's final degree classification.

These concepts will be explained in turn. When the theory is better developed, we shall be able to structure the explanation such that the focus is on the patterns of behaviour within constraints: the focus will be more on the relationships between the concepts, rather than by individual concept.

Uncertain contribution

Is this group member going to do the work? On time? To a good standard? If the answer to one or more of these questions is 'I don't know' or 'maybe', the context becomes one of uncertainty.

Students, however, prefer to work in a context of certainty. At the beginning of a course, reputations are unformed and students are unable to answer the 'contribution evaluation questions' above. As the course progresses and reputations are formed, students can be more proactive over achieving a greater certainty of contribution when forming groups and in the performance of the group work.

Group composition

The risk to marks is contingent upon the group composition: there are groups that perform better and groups that perform worse. What impacts on performance is the combined capability of the group, their propensity to contribute effort (time and energy) and their affability.

Students therefore prefer to work with people whose reputations are known to them, where what is known is that person's particular combination of capability, propensity to contribute effort and affability. Where these things are known, contribution can be managed such that uncertainty of contribution and the concomitant risk to marks, is reduced. Where these things are not known, uncertainty of contribution follows and risk to marks is perceived.

Mark maximising

The students' need for marks drives mark maximising behaviours from an early stage. In the hiatus between group work being assigned and groups forming, uncertainty is high: the more valuable the group work the higher the tension. Where students may form their own groups, students aim to create their optimal group using a strategy of quick clustering: in the later years of a course, groups can be formed in seconds on the nod of a head and the wink of an eye. Often, especially early in a course, groups are assigned, membership imposed.

Perceived risk

What varies what students do as they attempt the assignment, is perceived risk to marks (Table 1).

Table 1: Perceived risk

Perceived risk to marks	Certainty of contribution	Mutual trust	Reputations
High	Certain (to be poor)	Low	Known (to be 'poor')
Middling to high	More uncertain	Low	Unknown
Middling to low	Less uncertain	High	Unknown

Table 1: Perceived risk

Perceived risk to marks	Certainty of contribution	Mutual trust	Reputations
Low	Certain (to be optimal)	High	Known (to be 'good')

Where perceived risk to marks is highest, group work is conducted in a context of certainty: group members are confident that the work submitted will be compromised, will be to their collective standard and may be late. Where perceived risk is lowest, groups tend to work well producing work on time to their collective standard.

In this study the prevailing context for most of the people most of the time was uncertainty and the perceived risk to marks was middling or higher.

Performing, rescuing and compensating

The context of some groups changes from more certain to more uncertain as temporal organisation points pass and contributions are unrealised: the non performance of a group member becomes visible and the perceived risk to marks increases.

When non-performance is noticed, group members will contact the non-performing student to encourage and later to exhort the student to contribute. As the assessment deadline approaches, group members will compensate for the work undone by performing it themselves. Sometimes because of the design of the group work, non-performance may only be noticed at a late stage: the heroic may feel the need to go to extreme lengths to compensate perhaps pulling 'all nighters' to finish the work. The tension and anxiety of group members in the period between encouraging and compensating is extremely uncomfortable: they are wracked with indecision about what to do about the non-performing student not wishing to offend or cause ructions. They are cogniscent that relationships have to be maintained beyond this coursework. When group members know that a student has a low propensity to contribute, they can plan to integrate the work earlier in the assessment timeline.

Assessed group work

The main work of the group is the negotiation of ideas and the negotiation of work process: an important aspect of process is temporal. The main dimensions differentiating assessment design relates to the degree of conceptual integration and the degree of temporal integration required. The four main types of assessment design to emerge from this study are colouring-wheel, domino, jigsaw and woven, where design impacts on the timing and the nature of group work rescue.

1. The colouring-wheel design means that the work can be easily segmented and each piece of work is independent of the other temporally and conceptually. There is very little or no negotiation of either ideas or process. The final artefact is assembled by matching the pieces at the edges.
2. The domino design requires sequencing of work and thus each piece of easily segmented work is temporally and conceptually dependent on earlier pieces. There is some negotiation of process and ideas.

3. The jigsaw design has easily segmented pieces of work which are interdependent. The ideas have to be negotiated at the margins and the overall shape and picture has to be shared. There is considerable negotiation of process and ideas.
4. The woven design is fully integrated and requires close and continuous negotiation of process and ideas.

For the colouring wheel design, the non-performance can be obscured until the final assembly of the finished physical, digital and/or conceptual artefact. Options to rescue at this point are limited and can result in heroic efforts to compensate for missing work or result in work with missing or compromised segments submitted. Where a group has a student with a poor reputation, (non) performance can be monitored and compensating work integrated more strategically.

For the domino design, timely contribution is critical. Non-performance of an early piece of work on which others rely can create scheduling problems for other group members. The later that group members accept the non-performance and compensate for it, the greater the effort that the remaining group members have to contribute in a shorter timeframe and/or the more the quality of the finished artefact is likely to be compromised. Where a group knows that has a student with a poor reputation, allocating that the student the final piece of work can enable other group members to complete their work and leave time to compensate for non-performance in a slightly less stressful way.

For the jigsaw design, group members performing the work can progress without the non-performing student up to a point. Artefact designs can be shaped and communicated to the non-performing member and the work of the other group members can continue. The sooner that non-performance is noticed, the sooner that the remaining group members can compensate but due to the interlocking nature of the design, the final product is likely to be compromised.

For the woven design, non-performance will be noticed very early in the process. Either the remaining group members have to put in a great deal more effort for the duration of the coursework (potentially to the detriment of other course works) or the work submitted is compromised.

Consequences

The aim of mark maximising behaviours is to reduce the risk to marks whilst the group work is performed and to achieve optimal marks which contribute to the student's final degree classification.

Conclusions

Whilst this theory is incomplete, the practical implications for group work design were evident. Consistent with Glaser's advice (2014) some concepts from the theory were applied to facilitate the performance of group work. We plan to continue with theoretical sampling in October, 2017 to find out more about the effect of the changes made and about what students *do* to in different contexts of uncertainty and under different assessment designs. A next step for the grounded theory perspective is encourage the neglected option of applying grounded theory (Glaser, 2014). It is also a planned future step for this theory.

References

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