Strengthening teamwork to improve student engagement in Managerial Economics and Strategy

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A series of tests and a major project, designed to be undertaken in teams of two students, and with ongoing feedback as an integral component, was introduced into scheduled tutorial classes, in an attempt to improve flagging student attendance and low student motivation. After a single semester of implementation, attendance at tutorials has improved (to nearly double the previous year), students are actively engaging in their work with their colleagues, and average assessment marks are a full grade higher compared to the previous student cohort.

Keywords: Curriculum improvement, student engagement, evaluation

Introduction

Students studying the Bachelor of Business degree program at Swinburne University’s Faculty of Higher Education Lilydale (FHEL) undertake an optional unit LBE 201 - Managerial Economics and Strategy, in their second year at university. The learning objectives of this unit include students gaining experience in applying key concepts in the discipline, and developing their team work skills.

In 2007, major changes to the content and delivery of the second year unit, Managerial Economics and Strategy were introduced as a means to respond to evidence of poor student engagement in the unit the previous year. The lack of student engagement manifested itself in a number of ways: poor attendance at lectures and tutorials; the overall final grade had declined considerably in comparison to previous years; and students reported a lack of interest in the subject. Teacher observations supported these reports, and teaching staff also believed that students did not appear to work effectively in teams, primarily based on the performance and quality of the group work in both submitted work, presentations, and in discipline when it came to completing the team work.

Student evaluation on the unit rated poorly, primarily due to unforeseen changes in teaching staff during the semester, and, following from this, a lack of timely feedback to students. Students also reported a lack of engagement and
stimulation with the unit, due at least partly to insufficient time in tutorial classes.

To respond to these issues a number of changes were made to the unit, in order to ensure more positive student engagement and more productive and efficient student team work. Findings from the literature were consulted to ascertain areas where effective improvements could be made, and an evaluation project was undertaken to determine whether these strategies appeared to be having the desired effect. This paper describes the outcome of the changes, after a single semester.

**Student engagement and team work**

Student engagement has been at the centre of academic discourse in Australian universities over the last decade or so. The term is closely aligned with how much time, effort and energy students utilise in order to make their learning at university more beneficial. These activities include the time students spend on campus attending lectures and tutorials, time allocated to studying and revising work, interaction with colleagues and instructors in an educational way and other activities that connect students with the wider community (Krause, 2005).

The link between student absenteeism and successful performance in economic courses, particularly at undergraduate level has been well documented. Earlier studies have shown that students who attend classes on a regular basis perform significantly better in terms of final results compared to those who attend irregularly (Schmidt, 1983; Park & Kerr, 1990). Romer (1993), in a study on the relationship between student absenteeism and student learning, found that student absenteeism was as high as 47 percent in economic classes in American elite universities. Furthermore, he established the link that full attendance to lectures and tutorials potentially provided an increased grade score, compared to those whose attendance was more sporadic. He concluded that

“At the very least, exhortations to attend class seem called for, and those exhortations can be backed up with data” (Romer, 1993, p173).

Recent work on the relationship between attendance and student performance in economics classes found that student absenteeism impacted negatively with students’ grade or scores performance. Stanca (2006) estimated that missing one lecture was associated with a loss of half a percentage point drop in test scores. He concludes:

“The opportunity cost of missing lectures is relevant not only in absolute terms but also in relative terms” (Stanca p263-4).

Marburger (2006) investigated the impact of enforcing an attendance policy on absenteeism and student performance. Marburger’s work supports Romer’s findings (1993) and concluded that a policy of mandatory attendance not only reduced absenteeism, but also improved student performance in terms of students’ scores in the final exam.
Attendance can be encouraged by the inclusion of assessment within scheduled class time. Continuous or ongoing assessment in tutorials gives both the student and the lecturer detailed up-to-date information on the students’ development and learning needs, in time for changes to be implemented before semester grades are finalised. This assessment technique has been applied using different methodologies. For example, Isaksson (2008) has successfully applied continuous summative assessment in the form of ‘five-minute’ essays to engage students and to ensure that students were more focused at each lecture.

In economic teaching, team work has begun to play an increasingly important role. Apart from the employment enhancement opportunities that group work provides, team work assists students in sharing the experience and complexity of the course as it provides a structured opportunity to form a study or study groups. Such study groups can be either in- and out-of-class study groups (Becker, 1997) or online study groups by using new learning technologies such as Blackboard. Team collaboration allows students to solve complex problems of a technical nature by discussion and applying different options and methods in trying to solve different economic problems. Furthermore, development of teamwork and problem solving skills are closely linked to employability skills. Employability skills are defined as

“skills required not only to gain employment, but also to progress within an enterprise so as to achieve one’s potential and contribute successfully to enterprise strategic directions” (DEST, 2002, p3).

Such skill sets are required by both employers and employees so as to respond to the demands of a rapidly changing and evolving labour market (DEST, 2002).

There is strong evidence that there are clear advantages in team work, however, there needs to be some approach to effectively measure and monitor team work (Cheng and Warren, 2000). A number of different approaches have been used to ascertain how effective teams have operated. To ensure efficient teamwork, Wilson (2005) conducted a team-based guided design serial decision making (SDM) exercise in a senior and graduate level managerial finance course between 1985 and 2002. His findings show that action or team learning projects prove to be an effective means for teaching managerial decision making and for teaching basic economics. Furthermore, he argues that students who work in teams “…are much more likely to reach superior decisions than individual students left to their own knowledge” (Wilson, 2005, p288).

Another strategy used to assess how well teams have performed has been the introduction of a peer-review component of assessment as a way of building and strengthening team work. In implementing this strategy for second year Macroeconomics, Crockett and Peter (2002) changed the assessment system in the second year unit, by incorporating a substantial percentage of the assessment relating it to peer review. Although cautious in their findings, the authors found that students appeared to have adopted more appropriate learning strategies, and the tutors reported higher levels of student achievement and increased satisfaction arising out of their teaching work.
Williams (2005) assessed team performance by placing special attention on ‘free rider’ students. Such students do not shoulder their fair share in completing their designated tasks within the group and free-ride on the goodwill and hard work of their colleagues. Using the Universitas 21 Global (U21G) model, Williams ensured that students rated each other’s and their own work contribution to a team assignment on a 7-point scale system. The scale ranges from 0, which signifies ‘no contribution’ and 5 which signifies ‘an outstanding contribution. A score of -1 indicates that the student has been a hindrance to group work. In spite of the fact that the program had been recently introduced and a number of implementation issues arose, Williams concluded that the complaints about ‘free riders’ had almost disappeared, indicating that such form of peer assessment improved team work (Williams, 2005).

The strategy implemented

To ensure more regular student attendance and meaningful class participation, particularly in tutorials, continuous assessment was introduced. This type of assessment consisted of pairing students in order to conduct multiple choice tests, problem solving activities and a group assignment. A test was also conducted in tutorials which had to be completed by students individually. Pair allocation occurred during the first week of semester, within the tutorial sessions. Students were encouraged to form their own teams of two, although the tutor allocated any remaining students to teams, especially where students were shy or reticent to approach colleagues. The rationale for pair work to be introduced at such an early stage of the course was to prepare students to work collaboratively, in order to have some form of experience that can be connected to future employment. Most job tasks in employment are now performed in teams and this is a good introduction for students to familiarise themselves with the concept of ‘long term’ group work (a common practice in the majority of employment arrangements). Another reason for requiring students to work through problems in pairs, including workshop tests, is that the concepts developed in Managerial Economics and Strategy are complex and technical. Collaboration allows students to solve complex problems of a technical nature by discussion and applying different options and methods in trying to solve different microeconomic problems.

Teams selected a project from a supplied list of 10 possible projects, with the only restriction being that no one project is taken by more than one team in each tutorial group. Students then worked on preparing a report (demonstrating analytical and application skills) and an oral presentation, with marks allocated to both the ‘product’ (i.e. the report and presentation), and on evidence of effective teamwork. Marks were awarded equally for both members of the team, although students who were unhappy with this arrangement were invited to meet with the unit co-ordinator to discuss this (no students took up this opportunity).

Due to scheduling pressures, only one team could present their work each week, meaning that the final presentations began as early as week 6 of semester, and continued through to week 12. This means that some teams had significantly
less time to work on their reports compared to fellow teams; however these students then had more time free for exam preparation or for assessment tasks for other units. Students were made aware of this during week 1, and were able to select when they preferred to present their work (i.e. negotiate their own due date).

A total of four new tests (paper-based, with multiple-choice questions) were introduced throughout the semester. While students were required to submit their test papers individually, they were encouraged and expected to work collaboratively with their team partner on their answers. Students do not have to agree on the final answers, but are expected to discuss these with their partner, and hopefully assist each other. It is hoped that this extension of the collaboration into the tests will help build trust between peers, and further develop the relationship within the pairs. The addition of tests into the tutorials should also reinforce the expectation that attendance at all classes is compulsory.

Evaluation
In order to evaluate whether these modifications were having the desired impact, a small evaluation project was undertaken during semester. Key evaluation questions were identified:

1. How effective are these changes in further developing students’ teamwork skills?
2. Is the standard of the submitted project reports better than previous cohorts? Is the overall mark better than the previous cohort?
3. Did any issues relating to team assessment arise? Do students think this is a fair assessment strategy?

Methodology:
Data from a variety of sources was sought in order to answer these key questions:

- Focus group interviews with students, during semester, to gain information on:
  - reflections on teamwork process and teamwork skills
  - issues related to assessment
  - feedback on personal engagement with the project (and the unit overall)
- Paper-based questionnaire at end of semester, to gain information on:
  - feedback on team experience
  - self-assessment of learning outcomes (e.g. team-work skills, independence etc)
  - satisfaction or otherwise with the unit so far (especially the assessment strategy)
  - suggestions for improvement
- Feedback from teaching staff
  - reporting on student comments, complaints, questions etc
  - perceptions of student engagement during tutorial sessions
  - judgement on overall standard of presentations and submitted work
Results from evaluation

Student focus group interviews
Two focus group interviews were conducted during the last 30 minutes of scheduled tutorial classes, after the tutor or lecturer had left the room. Participation in the interview sessions was completely optional and voluntary, and the interviews were conducted by an educational developer who had no role in assessment of student work. Interviews consisted of key questions asked of the groups, but also encouraged feedback on any aspects of the unit.

Overwhelming, the students appeared happy with the group work assignment processes, with collaborating with a partner on their tests, and with the changes to the unit made since last year. One group did raise an issue of unequal participation, but could not suggest a model which would work better than the current strategy of shared marks. The students seemed happy with the opportunity just to share their frustration, rather than wanting to change the assessment model.

One group were all happy with the project topics (even when they did not get to choose their own topics), and appreciated that the topic questions were broad enough to allow them to incorporate areas of personal interest. However, the second group found the topics less interesting, and hence were more likely to complain if they did not get their first preference for topic. It was interesting that this group also felt the topics were too broad, and would prefer more direction on what to focus on.

Students were satisfied with the staggered team presentations throughout semester, and appeared more concerned with the choice of topic rather than the date of the presentation – most used the topics to make their selection, rather than the timing in semester.

Student questionnaires
Paper-based questionnaires were administered during tutorials in the penultimate week of semester (Week 11). Questionnaires were distributed with information required from the local Research ethics committee forming the front page, and students were assured verbally that participation was completely voluntary.

Twenty-three completed questionnaires were returned (from an enrolment of 29, giving a 79% response rate), however many of these only contained responses to multiple choice questions. Very few responses to open-ended questions were received, and most of these were single-word responses. Responses to questions about lecture or tutorial attendance were necessarily skewed (albeit only slightly), since the questionnaire was administered in tutorials, meaning that students who do not attend class are not included in this survey; however we can still find some information on attendance rates (at least for those who did attend during this week of semester).
Generally, students are satisfied with their overall experience in LBE 201, although non-attendance at class is an issue (as it is with other units in the Faculty). When asked about the specific changes introduced this year (aimed at strengthening the collaborative work), students were very positive. The teamwork and collaborative activities were easily the most popular feature of the unit.

Most students chose their partner (or were approached by some-one else), and even those who were put into teams by the lecturers were happy with the process involved and with the outcome. Overwhelmingly, students were happy to collaborate with their team partner on the tests – even collaborating with another team if their own partner was absent. No negative comments were raised on this question, and several students commented that they found the experience helpful to their learning (for example “it was beneficial because I learnt more”). Most students liked the timing of the tests (scheduled throughout semester), although a few students did nominate the timing of the tests as an issue, particularly the last test for semester.

Students were happy with the time allowed for the team project, and with the staggered assessment schedule (where some teams delivered their final presentation early in semester, whereas others did not complete their work until the final teaching week). While the questionnaire did not specifically ask about project topics, several students mentioned the interesting project topics as the most enjoyable aspect of the unit (although it is worth noting that one student also listed the topics as the least enjoyable aspect!).

Some concerns were raised with the assessment strategy, although by far the majority of students were happy with the current situation. Those who did raise concerns expressed dissatisfaction when one member of the partnership did not put in equal (or any) effort, yet received the same marks for the final product. A question asking about feedback received from the teaching staff elicited a diverse range of responses, from some students stating they had sufficient, constructive feedback, to others claiming they received no feedback. Since all students had the same tutor, it is difficult to interpret these disparate responses, and probably indicates that some students are more likely to seek feedback and/or to recognise feedback (in its multiple forms) when it is given. It may be worthwhile for the tutor to focus a little more on ensuring not only that all students receive feedback on their work, but that verbal feedback is also recognised as such.

Feedback from teaching staff

The unit convenor (who also lectured and tutored in this unit) reported that the changes made to the unit appeared to have a positive effect in terms of student engagement and interest in the unit. Requiring students to work in groups from the beginning of semester ensured that the ‘isolation factor’ of working alone in economics was minimised, and fostered an atmosphere of friendly collegiality and seemed to make the subject more interesting and relevant to students. The requirement for students to present their findings to their colleagues and receive
feedback also helped to increase attendance at class and to improve student discussion and hence engagement.

Attendance was recorded at tutorial classes, but not at lectures (although the lecturer believed that lecture attendance had improved markedly from the previous year). Table 1 shows the tutorial attendance figures for 2006 and 2007 cohorts, together with the average semester marks for each year.

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<thead>
<tr>
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<th>2006</th>
<th>2007</th>
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<tbody>
<tr>
<td></td>
<td>Enrolment</td>
<td>Attendance</td>
</tr>
<tr>
<td>Tutorial 1</td>
<td>20</td>
<td>45%</td>
</tr>
<tr>
<td>Tutorial 2</td>
<td>13</td>
<td>46%</td>
</tr>
<tr>
<td>Average final mark (whole cohort)</td>
<td>59%</td>
<td>70%</td>
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These results clearly indicate a marked improvement in average final marks, which we believe to be at least partly due to the improvement in attendance rates, supporting the evidence of Romer (1993) and Marburger (2006), among others. Both students and the lecturer reported that students were engaged more with the subject and with each other (compared to previous cohorts), which also would have contributed to the improvement in overall marks.

**Institutional evaluation survey results**

This project was originally implemented in response to a poor rating given by students on institutionally-administered Student Feedback on Teaching surveys, conducted at the end of every semester. Unfortunately, only two students responded to this survey in 2007 (perhaps because they had already participated in surveys conducted by the authors), so a comparison between different cohorts of students was not possible (although those two students were highly satisfied with every aspect of the unit).

**Discussion**

This project began with an identified problem of poor student engagement with their studies in a Managerial Economics project, and a desire to use the scholarly literature in the field to inform strategies to improve the outcomes for students. Students appeared to be performing poorly in assessed group work, which was perceived to be due to a number of factors, including a lack of motivation, poor attendance, and poor discipline related to preparing and submitting work on time. Student feedback from institutionally-administered surveys supported these perceptions.

Using the work of Romer (1993), and more recently Marburger (2006), which reported that increased class attendance led to demonstrated improvements in student grades, a strategy of continuous assessment, conducted within scheduled classes, was introduced (similar to the strategy employed with success by Isaksson, 2008). We can report similar success, in that tutorial attendance rose
(from 45% to around 80%), and the average class marks similarly showed a marked improvement, up a full grade (from 59% to 70%).

This continuous assessment was conducted in pairs, in an attempt to improve the teamwork skills of students. The unit convenor (who was also the lecturer and tutor) reported that students appeared to take their responsibilities in their team seriously, and with the exception of a single team (where one member of the pair did not attend weekly tutorial classes), put a lot of effort into their team’s presentation to their peers. Students appeared to accept the importance of teamwork, with several students mentioning this during the focus group interviews (as one of the skills asked about in employment interviews).

The issue of ‘free-riders’, or non-contributing students, was not addressed in this paper, but is an obvious area for consideration in the next iteration of this unit.

Comparison of institutionally-administered student feedback surveys across two student cohorts (2006 vs 2007) could not be made due to a very poor response rate in 2007, possibly due to students already having participated in the evaluation project reported here. However, in our own questionnaire, students overwhelmingly reported that they found the teamwork highly enjoyable, and stated that the collaborative activities were not only motivating, but helped with their learning.

From the results from student feedback, staff observations, and assessment and attendance figures, we are confident that the introduction of staggered assessment with ongoing feedback into the tutorial classes has had the desired effect of improving student attendance and engagement, and has thereby improved the average grades of the students in this class.

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References


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