Facilitating Group Learning in IT Higher Education

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ABSTRACT

With the increased use of teams within organisations to disseminate knowledge and work collaboratively on projects, educators need to look closely at how they can improve student outcomes by facilitating group learning. The use of group projects prepares students for the workplace of tomorrow where they will encounter having to collaborate successfully in teams. This paper describes how groups are formed and provides a number of ways to improve this process. The paper then draws on the instructors' reflections on field work undertaken while delivering a number of courses and goes on to develop the findings into an instructor impact contribution model on group learning. Even though some of the outcomes from this research may appear to be obvious, they can be of assistance as a reminder to those teaching in the educational field.

INTRODUCTION

The 21st century heralds a new kind of workforce with greater computer literacy skills than ever before. With it brings increased reliance on teamwork within organisations and required by professional bodies. As educators, we are aware of the need to provide students with opportunities to experience group work before they finish their studies. Two such courses that use group work within a business setting using project management skills have been reflected upon and explored.

The question of how groups are formed is an important one which has arisen while teaching within the university. Different methods have been used in forming groups for collaborative group projects in a number of different courses. These mainly consisted of the instructors placing students into groups; the students placing themselves into groups; or students without a group either forming a new group or being attached to a group whereby they were then expected to get on with the task at hand. When instructors assist students to improve group interactions and group learning, this supports students' progress and development.

The instructors conducted an interpretive, qualitative case study while delivering a number of courses in a higher educational setting and reflected on the field work undertaken. From this came a number of findings highlighting the impact of an instructor's interactions with group members on group forming performance and social-emotional understanding. These findings were developed into an instructor impact contribution model on group learning.

ASSESSING GROUP LEARNING

Being educators with IT industry expertise, we can emphasise the significance of the use of IT in business courses. From our educational experience and involvement in the introduction of active learning projects in a variety of courses we saw an opportunity to conduct interpretative research assessing the methods used within these courses when dealing with group work activities (Parikh, 2002).

From our own observations, one of the common problems encountered with group work is in the early stages of formation. This is the time when communication among group members is essential as this can influence the group's success or failure. We found we needed to be more directly involved in the early stages of group formation to facilitate an effective process for group communication, trust and the sharing of knowledge (Leonard, Scholl & Beauvais 1996; Tiessen & Ward 1999).

Group work encourages a comparison of different solutions to complex problems, develops problem solving strategies, and ways of understanding particular problems. In support, Tiessen and Ward (1999, p 632) state that "sharing information and communicating to coordinate activities and to collaborate in building communal knowledge" assists in the learning required to address day-to-day complexities.

In order to assess the success or failure of group learning, the instructors constantly sought students' concerns (see Metcalfe & Hobson 2001) and reflected on their own perspectives of the issues arising from group work and group learning. A matrix was developed of common themes and notes were collated from ongoing student feedback and from the instructors' reflection journals. Kuit and Reay (2001) support these methods as appropriate for reflecting on teaching outcomes. Some of the emerging themes found by the instructors and supported by Shapiro, Furst, Spreitzer, and von Glinow (2002) were concerned with trust, communication, and a realistic planning schedule.

EVIDENCE FROM THE FIELD

This research is based on an analysis of qualitative data obtained from two ongoing courses which are mostly IT focussed. In the courses, (1) groups were asked to reflect on their group work experience through informal interviews throughout the semester, (2) students kept an ongoing journal during the course, or (3) students were able to give their views in a course exit survey. Reflective journals were kept for each course in which observations of group interactions, task allocations, collaboration, and ethnicity issues were then interpreted and coded into a matrix approach to facilitate the identification of common themes. The key themes arising from the matrix were communication, trust and a realistic planning schedule as supported above.

Students were able to develop their skills as group decision makers to either develop a business project plan and then create effective business documents for a client, or to scope a systems project and develop a final plan and project proposal while engaging with ongoing changes in the project information as it came to hand from the business. The groups were expected to understand the project the business wanted, deal with any problems arising from the project, decide if they needed more information and ask for it (this is sometimes a problem in itself), then work out how they, as a group, were going to produce an exceptional business project with an acceptable outcome to both the business and for their assessment.

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The first course incorporated a desktop publishing business project which required students to produce a portfolio of professional looking business documents for a small business client. The groups for this project could be either three or four in number with the instructor organising the groups by placing students with compatible meeting times together to help facilitate communication and work patterns within the group. The group had to meet with their business three times over a ten week period. The first business meeting was to establish the background and objectives of the business and to produce a list of possible documents

that could be developed for the business. The students had to submit the list of documents along with a detailed project schedule for final academic approval. The second meeting was for the students to present their ideas and sketches to the business. Students then developed the approved business documents to the final stage using a graphic design software application package.

During the course the instructor would hold regular informal meetings with each of the groups to ascertain the group's performance and provide support where needed. At the end of the course students filled out exit surveys where it was noted that groups with members who did not attend all group and business meetings had more communication and trust problems. A wayward group member could be marked down in a final peer evaluation report. Groups tended to follow their planned business meeting schedule but needed to keep updating the timelines for document production.

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In this course students gained skills in project management and project team motivation. The practical activity in this course not only included the scope of a systems project but a final plan and project proposal, meaning that the process demanded high project team collaboration in the early stages of the project life cycle (that is, goal and objective(s) definition and resource allocation for the proposed project solutions).

Aimed at assessing the impact of the instructor's facilitation of group-forming, the same practical activity of the course was conducted in two different groups (that is, external and internals students) with different approaches. For instance, in phase 1 of the project (that is, goals and objective definitions) for external students, the instructor identified early on the role of each project team member. Each team member was given one of the following roles, project manager, project director, customer, client or the project stakeholder. The early identification of group roles meant that communication and trust was already present while the identification of phase 1 was taking place. Both, communication and trust are crucial success factors for the project's scope and responsibilities/resource allocations in all four phases of the project.

In contrast to the external groups, the internal groups were assigned the task to negotiate amongst themselves each project member's role. For this group students' achievement motivation was often low because students feel more positive about working individually. Their view was that role allocation in the forming stage of the group took longer than expected and was a potential cause for the project's failure. Please note that the instructor's focus was to allow the team to self-organise and not to facilitate this part of the process. Of more interest was that most group members raised the issue of trust via feedback forms, and in the completion of the project's proposal at the conclusion of the course, indicated communication breakdown in the development of phase 1 and 2 (that is, identification and planning phase of the project).

Figure 1. Instructor contribution impact model
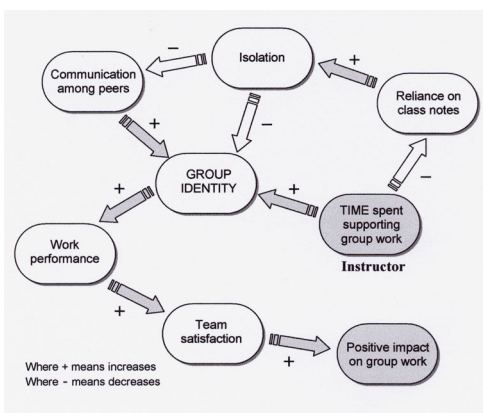
IMPACT ON GROUP PERFORMANCE

Encouraging the facilitation process in the early stages of team development will result in a solid foundation for knowledge sharing. From our ethnographic experiences, we found that early interaction with team members helped to make the adoption of goals and objectives clear. At the same time, it helped build a shared identity and recognition of each member's strengths and weaknesses. A model of the impact of an instructor's contribution to group performance is presented in figure 1.

The development of socio-emotional understanding between team members requires repeated interactions across time. As a result, one way to develop this among members is for instructors to provide a relaxed and comfortable environment in which the members develop trust, affective bonding, and an understanding of their own individual performances as an input to the group. It has been suggested that active learning and knowledge sharing in a social context are preferable ways of learning in the education field (Bonwell 1998).

Ways to assist group knowledge acquisition and group support, and to develop a social learning environment in the classroom, are also required. Soft systems methodology could strengthen this process. As Checkland (1991) points out, a complete analysis of the system is required in order to come up with supporting mechanisms that can guarantee the system's further development and relevant success. In this case, the instructors have tacit and explicit knowledge of the environment; continued monitoring of the system's efficacy, efficiency and effectiveness - the three E's of systems thinking - needs to be completed (for an example of the social application of the three E's see, Joham & Hobson 2003).

CONCLUSIONS

This paper has attempted to describe the importance the instructor plays in the facilitation of group activities in the IT education field. An instructor contribution impact model has been presented to show the important impact practitioners can play in group performance. It is necessary for instructors to contribute in the early stages of group formation by providing encouragement, positive problem solving direction, a positive and relaxed environment to facilitate supportive learning, and an open-door policy.

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