PERCEPTIONS OF LIS GRADUATE STUDENTS OF PEER LEARNING

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Abstract

Introduction. Peer learning is considered one of the effective techniques for imparting knowledge, particularly at higher education levels. The purpose of this study was to investigate students' perceptions of group projects, effectiveness of peer learning, factors considered while picking team members, and their satisfaction with contribution made and grades received by team members.

Method. Data was collected through a pre-tested questionnaire and 200 post-graduate students from Nanyang Technological University, Singapore participated in this study.

Results. It was found that around two-thirds of the respondents preferred team projects over individual assignments. Although they were open to work with any classmate, they preferred to working with those students with whom they had previously completed projects successfully. A majority of the respondents agreed that most of the times their team members were responsible, supportive, considerate, knowledgeable, accommodating, and contributed positively to the project. However, they avoided selecting a team leader, and often project members voluntarily accepted different responsibilities according to their interests, strengths, and competencies. They agreed upon deadlines for their contributions and often one team member accepted the responsibility of consolidating and editing the final project report. Some problems faced by the respondents in completing their team projects included: time constraints, difficulty in arranging meetings, different work habits, cultural differences, and inadequate language proficiency of international students.

Conclusion. The paper suggests certain measures for improving effectiveness and usefulness of team projects.

Introduction

In recent years, a large body of literature has emerged discussing the innovative pedagogical approaches to effective teaching and learning. Collaborative learning is considered one of the established, popular and effective learning approaches. Many academic institutions are incorporating team projects and other peer learning activities in their instructional approaches. Collaborative peer learning brings benefits such as higher student motivation and achievements, greater comprehension and retention of knowledge, development of critical thinking, better communication skills, and encouragement for knowledge sharing. Studies on peer learning have also affirmed that collaborative learning is more effective in knowledge acquisition, retention, accuracy, creativity in problem solving, and higher-level reasoning than the competitive or individualistic learning (Gilliam, 2002).

Learning collectively enhances confidence and motivation level of students as they realize that they can contribute to the learning of others and they also feel a sense of responsibility as others are depending on them. It also helps improve their reasoning skills as they need to put their ideas logically and convincingly. Peer learning can also help students answer questions and solve problems, learn new things, increase understanding of different issues, develop stronger interpersonal and social skills, and develop a positive attitude towards their fellow students. Different terms have been used to illustrate this form of learning with some distinct differences in their characteristics; though they are also widely used interchangeably. Cooperative learning, collaborative learning, peer

learning and group learning are interchangeably used to define a process in which students work jointly in small groups to accomplish an educational task. Some other commonly used terms are: team learning, study circles, peer teaching, collective learning, learning communities, study groups, and work groups.

Once students have adequate team work experience, it becomes an asset during their working life. Hernandez (2002) noted that employers prefer those individuals who can work effectively in small teams, and peer learning can be an effective tool to expose students to teamwork dynamics and equip them with necessary skills. Blowers (2003) reported that employers prefer those graduates who are team workers as their communication, reasoning and critical thinking skills can play a vital role in organizational success.

Peer Learning

Peer learning refers to the acquisition of knowledge and skills through active help and support among status equals or matched companions (Toppings, 2005). Peer learning essentially involves student learning with and from each other as fellow learners without any implied authority to an individual, based on the tenet that students learn a great deal by explaining their ideas to others and by participating in activities through which they can learn from their peers (Boud, Cohen & Sampson, 2001).

An important characteristic of peer learning is that everyone is expected to participate. It places students in small groups and encourages individuals to work together in solving common problems, completing academic tasks, and learning specific content (Siegel, 2005). Christudason (2003) described peer learning as a form of cooperative learning that enhances the value of student-student interaction and results in various advantageous learning outcomes.

Needless to say that peer learning greatly helps in social exchanges. It is useful in developing relationships among people from different cultural backgrounds and recognition of students with special needs. Peer learning teaches students to care about the needs and feelings of others in their group and at the same time accomplish an academic task. In other words, it requires students assume responsibility for themselves and for the success of their group (Vezzuto, 2005)

Difficulties in Implementing Peer Learning

The benefits of peer learning are vastly recognized in the academic and industrial worlds. However, often people do not fully recognize the complications and delicacies associated with it, resulting in failure to achieve the intended benefits. Siegel (2005) noted that the willingness of teachers to implement collaborative learning is dependent upon teachers' experience and knowledge, congruence between teachers' philosophy and instructional methods, and teachers' ownership of innovation. Although group projects are quite common these days, only few teachers give enough attention to improve students' speaking, writing, and group interaction skills. Besides, students' attitude towards teamwork also affects its quality and effectiveness. The two most common attitudinal barriers to group projects are free-riders and the transaction cost. Free-riders are those team members who do not contribute to their full potential. As often a single grade is assigned to the whole project team, some group members take advantage of others by not fully contributing to the project. The transactional cost is the amount of time group members have to spend on interaction, communication and collaboration. The transactional cost ranges from time spent on scheduling and meeting group members to settling down differences in task assignment, defining work strategies, and writing the project report. Other possible barriers to peer learning are: the formation of dysfunctional groups; lack of commitment; inability to overcome differences; and lack of democracy within the group. The instructor can play a crucial role in overcoming some of these problems. Genovese (2005) suggested that educators should take individual instructional needs and student personality types into consideration prior to assigning collaborative learning activities.

Group Characteristics and Peer Learning

Group attributes play an important role in the success of a team project. Houldsworth and Mathews (2000) found that heterogeneous groups (those having a diversity in gender, age, and experience) performed more consistently than homogenous groups (those in which the members are more similar to one another). Gatfield (1999) studied relationship between students' attitude towards group work and their age, gender, and ethnicity. It was reported that ethnicity (Australian vs. international) influence students' attitudes towards group work but factors such as age and gender do not. However, Mallow (2001) found that females prefer group projects to traditional lectures, because of its interactive and cooperative components, and reduction in individual competition. Hutson-Comeaux and Kelly (1996) investigated the gender-differentiated interaction styles and found that female teams engage in more positive socio-emotional behavior while male teams engage in more active task behavior. Some studies also suggest that with increase in team size, the tendency of social loafing (free-riders) becomes more likely. It was also reported that team size is linked with the frequency of group interaction, task participation, and the overall success of the project.

Student Contribution and Grades

Despite many advantages of group projects, evaluation of individual student's contribution to the project has always been a challenge. Not all students contribute equally and if everybody in the group is given the same grade then better students would feel frustrated and it would also encourage free-riders. Peer assessment is one of the ways to overcome this problem and in many situations group members can evaluate each other's contribution more accurately than supervisors. Lourdusamy and Divaharan (2000) found that peer assessment motivates students and make them more conscientious in undertaking the assigned work. They also found that students considered peer assessment an interesting experience for them.

In the past couple of decades peer learning has become a topic of common interest and team projects have been accepted as an effective learning approach at all levels of education. Its validity, reliability and acceptability have been explored through many studies. However, in some cultures or situations, there might be some resistance to certain peer learning activities. The purpose of this study was to investigate the perceptions of post-graduate students of the effectiveness and usefulness of peer learning, their satisfaction with team projects, and their opinion about the fairness of grades received by team members. Although many learning approaches fall within the concept of peer learning, this study is confined to investigating team projects as a source of peer learning.

Method

A pre-tested questionnaire was used for collecting data for this study. The questionnaire included four sections and 12 questions; most of the questions contained several statements, investigating different aspects of project work. The first section of the questionnaire gathered demographic information of the respondents. The second section investigated respondents' preference for group project while the third section was on their perceptions of peer learning. The last section of the questionnaire was on respondents' perceptions of the attitude and behaviour of team members.

The study population comprised post-graduate students of three information-related master's degree programmes offered by Wee Kim Wee School of Communication and Information at Nanyang Technological University, Singapore. The questionnaire was distributed in six evening classes, attended by both full-time and part-time students. The respective course instructors were approached to seek permission for conducting the survey in their classes. The questionnaire was distributed during the class breaks and students were given approximately 20 minutes to complete. The survey was conducted in November 2007 and a total of 200 post-graduate students took part in it.

Findings

The following sections provide an analysis of data collected through the questionnaire survey and highlight certain important trends emerging from data analysis:

Profile of the Respondents

A majority of the respondents (84 or 42%) were from MSc (Information Studies) program, while 63 (31.5%) were from MSc (Information Systems) and the remaining 53 (26.5%) from MSc (Knowledge Management) program. There were 55% female and 45% male respondents. The study status of the respondents was almost the same, 50.5% part-time and the rest 49.5% were full-time students. A majority of the respondents were Singaporean (45%), followed by international students (35%) and the remaining 20% were Singapore permanent residents.

Preference for Group Work

The respondents were asked whether they prefer working in groups or individually on their course assignments and term reports. Majority of the respondents (118 or 59%) showed their interest to work in groups while a considerable percentage (41%) of them also showed their preference to work individually (Table 1). There were no significant differences in responses based on study program, gender, study status, and the nationality of the respondents.

Table 1: Preference for Group Projects

Work Preference	Frequency	Percent
Preference to work in a group	118	59.0
Preference to work individually	82	41.0
Total	200	100.0

Factors Considered for Picking Team Members

The respondents were asked to identify factors that they consider while picking up their team members. It was found that 89% of the respondents either 'agreed' or 'strongly agreed' that they prefer working with those students with whom they have previously completed group projects successfully (Table 2). This was confirmed through another statement where 83% of the respondents 'agreed' or 'strongly agreed' that they avoid working with those classmates with whom they have previous unpleasant experience. Around three-quarters of the respondents either 'agreed' or 'strongly agreed' that they prefer including close friends in their project teams. It was probably because they trust and understand the strengths and working habits of their close friends. They also preferred working with students of same study status (full-time/ part-time), probably because it was easy for them to collaborate and organize meetings. On the other hand, the least important factors in the selection of team members were gender, ethnic group, and the same work experience. On the whole, it appeared that students preferred teaming up with their friends and those classmates with whom they have previously completed group projects successfully. It was encouraging to note that gender and ethnicity were not important for the students while forming their project teams.

Group Work Process

The respondents were given eight statements to understand the procedure they follow for completing their projects. It was interesting to note that only 15% of the respondents said that "most of the times" they pick a group leader to coordinate and lead the project (Table 3). On the contrary, 42% of them revealed that they 'never' pick a group leader. Probably, as also reported by Boud et al. (2001), the students felt that they are of equal status and believed in collective decision making than assigning authority to an individual. In addition, two statements investigated the mechanism used by the respondents for task distribution. It appeared that often students either voluntarily accept tasks according to their areas of interest or they mutually agree assigning different tasks to group members.

Table 2: Factors Considered While Picking up Team Members

S. No.	Statements	N	Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1.	I prefer working with those students with whom I have successfully completed another group project	199	35.0%	54.0%	5.5%	4.0%	1.0%
2.	I avoid those students with whom I have previous unpleasant experience	200	34.5%	48.5%	11.5%	3.0%	2.0%
3.	I prefer working with my close friends	199	16.5%	58.0%	18.5%	4.0%	2.0%
4.	I prefer working with students who are in my area of specialization	200	6.0%	41.5%	20.5%	29.0%	3.0%
5.	I prefer working with students with same study status (part/full-time)	200	7.0%	38.0%	22.0%	27.0%	5.5%
6.	I can work with any class fellow	197	5.0%	41.0%	32.0%	18.0%	4.5%
7.	I prefer working with those students who either live or work close to my place	200	3.5%	35.5%	33.0%	24.0%	4.0%
8.	I prefer working with those students who have same work experience	198	2.0%	30.0%	27.0%	37.0%	4.0%
9.	I prefer working with students from my ethnic group	199	5.0%	19.0%	23.0%	37.5%	14.5%
10.	I prefer working with students from my own gender group	200	1.5%	20.0%	31.5%	40.5%	6.5%

Almost all the respondents said that either 'most of the times' (74.5% respondents) or 'occasionally' (25% respondents) the group members agree upon deadlines for accomplishing the assigned tasks. Two-thirds of the respondents also disclosed that they regularly update their team members about their progress. Similarly, over one-half of the students said that they meet 'occasionally' with their team members to share their findings. Around two-thirds of the respondents said that 'most of the times' each group member prepares a write-up on the task assigned to him/her, and that one member accepts the responsibility to edit all the contributions for preparing the final version of the project report.

It appeared that often team members prefer some flexibility and freedom in undertaking project-related tasks; they voluntarily accept responsibilities, keep each other informed about their progress, and one of the team members compiles and edit the final project report. It also appeared that they do not believe in selecting a formal team leader rather they trust that all team members would be self-disciplined and will contribute without directions or persuasion from the team leader.

Table 3: Procedure Followed for Completing Group Projects

S. No.	Statement	N	Most of the times	Occasionally	Never
1.	We pick up a group leader	200	15.0%	43.0%	42.0%
2.	Often students volunteer for the tasks they can perform the best	199	53.0%	43.0%	3.5%

3.	We assign different tasks to each group member	200	72.5%	26.0%	1.5%
4.	We often agree upon the deadlines for accomplishing different tasks	197	74.5%	25.0%	0.5%
5.	We regularly inform each other about our progress (through email, telephone, etc)	200	67.0%	31.0%	2.0%
6.	All group members meet to share their findings	198	42.0%	53.0%	4.5%
7.	Each group member is responsible to prepare a write-up on his/her task, which will become part of the report	200	68.0%	28.0%	3.0%
8.	One member accepts the responsibility to edit the final version of the project report	199	66.0%	33.0%	0.0%

Perceived Behaviour of Team Members

The attitude and behaviour of individual team members often play a decisive role in the success of a group project. A set of five statements were used for recording perceptions of the respondents of the behaviour of their team members. It was worth noting that only a small percentage of the respondents 'strongly agreed' with the provided statements (Table 4). Between 56 to 70% of the respondents 'agreed' with these statements and a considerable number of the students did not express any opinion. It appeared that a majority of the respondents had positive feelings towards their team members; however, a higher percentage of neutral respondents was probably an indirect indication of some concerns in this regard.

Table 4: Perceived Behaviour of Group Members

S. No.	Statement	N	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
1.	My group members are often supportive	200	14.5%	70.5%	11.0%	3.5%	0.5%
2.	My group members are often equally knowledgeable	200	9.5%	56.5%	21.0%	13.0%	0.0%
3.	My group members are often considerate	198	12.0%	62.0%	18.0%	8.5%	0.0%
4.	My group members often take the group work seriously	200	11.0%	62.0%	21.0%	5.5%	0.5%
5.	My group members are often stimulating	199	7.0%	57.0%	27.0%	6.5%	2.0%

Contribution Made by Team Members

Through a related question, the respondents were asked to express their opinions regarding contributions made by individual team members. Once again, a very small percentage of the respondents either 'strongly agreed' or 'strongly disagreed' with the provided statements (Table 5). For this question, a higher percentage of the respondents decided not to express any opinion, probably they did not want to convey any negative feelings about their peers. Nearly one-half of the respondents 'agreed' that often their team members share equal responsibilities. However, it was interesting to note that 48% of the respondents also felt that they often contribute more than they are expected to do. A related finding was that only one-third of the respondents 'agreed' that all group members contribute according to the agreed upon work distribution plan. This finding somewhat contradicts responses for the first statement where over one-half of the respondents agreed that group members share equal work responsibilities. One possible explanation could be that probably they felt that although initially team members accept equal responsibility, they do not contribute according to the agreed upon workload. It was worth noting that more respondents disagreed with the suggestion that they often get lower grades due to lack of seriousness and hard work

by some of their group members.

Table 5: Contribution Made by Individual Team Members

S. No.	Statements	N	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
1.	Often group members share equal responsibility	200	8.5%	53.5%	21.5%	14.0%	2.5%
2.	Often group members provide help and encouragement to each other	200	8.0%	61.0%	23.0%	7.5%	0.5%
3.	I often contribute more than what I am expected to contribute	200	6.5%	48.0%	38.0%	7.5%	0.0%
4.	Often members provide adequate time for group discussion	199	5.0%	51.5%	27.5%	13.5%	2.0%
5.	All members do not contribute according to the agreed upon work distribution plan	200	3.5%	33.5%	35.0%	24.5%	3.5%
6.	Often I get lower grade due to lack of seriousness and hard work by some group members	200	2.0%	21.5%	42.5%	30.5%	3.0%

Skills Developed or Improved Through Group Work

Students were asked if group work has help improve their skills. It was noted that more than one-half of the respondents said that group projects have improved their problem solving, literature searching, data analyses, presentation and organizational skills (Table 6). Several previous studies have also noted that group projects help improve different skills of team members ((Vezzuto, 2005; Gilliam, 2002).

Table 6: Skills Improved Through Group Project Work

S. No.	Statements	N	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
1.	I am more competent in solving problems	200	8.5%	55.5%	30.5%	5.0%	0.5%
2.	I am more capable in literature searching	199	9.5%	54.5%	31.5%	3.0%	1.0%
3.	I am more capable in data analysis	200	9.0%	57.0%	29.0%	4.5%	0.5%
4.	I have improved my presentation skills	197	11.0%	56.0%	28.0%	3.5%	1.0%
5.	I have become more organized than before	200	9.5%	54.0%	28.0%	7.5%	1.0%
6.	I can do better time management	200	9.5%	34.0%	34.0%	9.0%	1.0%

Use of Communication Channels

The participants were asked to indicate their usage of different communication channels for discussing project related matters. Seventy-one percent of the students said that their team members either ‘very often’ or ‘often’ meet face-to-face within NTU, whereas only 27% of the respondents were meeting outside the University (Table 7). Another popular channel for communication was email and 91% of the respondents reporting using it ‘often’ or ‘very often’. It is worth noting that 74% of the respondents said that they either ‘seldom’ or ‘never’ use discussion forums for discussing project related matters. It appeared that the most preferred channels for discussing project

related issues were predominantly face-to-face meetings within the university or through email.

Table 7: Use of Communication Channels

Channel		N	Very Often	Often	Occasionally	Seldom	Never
Face-to-Face	Inside NTU	189	27%	44%	21%	6%	2%
	Outside NTU	178	6%	21%	36%	26%	11%
E-mail		198	58%	33%	8%	1%	0%
Telephone		196	15%	36%	30%	14%	5%
Discussion Forum		186	1%	8%	17%	30%	44%

Preference for Assessment Mechanism

The respondents were asked whether grades to team members should be given based on their individual contributions or group as a whole. It was interesting to note that 63.1% of the respondents supported the suggestion that grades should not be given based on individual contribution of team members (Table 8). It means that a majority of them indirectly agreed that most of their team members often contribute equally to project. This dispels the concern expressed by Siegel (2005) that in certain situations some students try to take advantage of their team members and become free-riders.

Table 8: Preference for Awarding Grades for Group Projects

Preference	Number	Percentage
Grades should be given based on individual contributions for the group project work	73	36.9%
Grades should not be given based on individual contributions for the group project work	125	63.1%
Total	198	100%

Difficulties Faced While Working in Groups

Despite a positive attitude towards group projects, the respondents were facing some problems while working in teams. The most frequently cited three difficulties (Table 9) were: difficulty in arranging meetings (67%), different working habits of group members (62%), and time constraints (59%). Another 48% of the respondents felt that "some students do not contribute adequately" while working on team projects. Other problems identified by the respondents were: language differences (38%), free-riders (36.5%), and cultural differences (27%). Certain previous studies have also reported some of these difficulties in undertaking team projects (Siegel, 2005; Genovese, 2005).

Table 9: Difficulties Faced While Working on Group Projects
(Multiple responses)

S. No	Difficulties Faced	Frequency	Percent
1	Difficulty in arranging meetings	134	67.0
2	Group members have different working habits	124	62.0
3	Time constraints	119	59.5
4	Some students do not contribute adequately	96	48.0

5	Differences in language	76	38.0
6	Some students take advantage of others	73	36.5
7	Cultural differences	54	27.0

Conclusion

No doubt, collaborative learning approaches are gaining popularity due to many advantages associated with them. However, full benefits of these approaches could only be obtained through careful planning and implementation. This study revealed that a majority of the graduate students preferred working with their close friends and team members of the previous successful projects. One benefit of group projects, as highlighted by many previous studies, is the development of interpersonal and social skills. Obviously if students continue forming project teams with their close friends, they will be unable to expand their social networks. Here instructors can play a more proactive role by encouraging students to include other students in their teams. A majority of the students also revealed that they often do not select a team leader and they either voluntarily accept or collectively assign project responsibilities. It is understandable that in certain situations it is difficult to assign authority to an individual, particularly in equal status groups. However, selecting a team leader could be helpful in developing leadership skills among the team members. It is obvious that students make a lot of efforts while working on their group projects; however, the benefits of these projects could be maximized through adequate guidance and encouragement from instructors. It is, therefore, desirable that before assigning team projects, the course instructors should adequately educate students about the group-dynamics and what is required to complete a project successfully.

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