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Co-operative Learning in Accounting

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Abstract

Co-operative learning in the form of a co-operative system was adopted in teaching an advanced accounting subject. Lectures were limited to incorporate co-operative learning activities. Reflections were done by students and lecturers. At the end of the course, a survey was conducted on the perceptions of students towards the co-operative system and teamwork. The result of the survey indicated a positive rating towards students' perceptions on the co-operative system and teamwork and the chances of improving their grades. The result of paired t-test showed a significant difference between the final grades of the students involved in this action research and the control groups. The students involved in the co-operative learning was found to achieve higher average final grades.

Keywords: Co-operative learning, accounting, accountancy, MQF.

1. INTRODUCTION

The Malaysian Qualification Framework (MQF) set the programme learning outcomes that encompass a comprehensive set of skills to be obtained by higher education students. It contains 8 set of skills that is not limited to acquisition of knowledge but also to cultivation of soft skills. The set of skills also applied to Bachelor of Accountancy programme. In 2016, the Malaysian Higher Education Ministry had introduced the iCGPA grading system, a parallel grading system that integrate the achievements of students in attaining the MQF skills. The expectation is for students to graduate with the abilities to work collaboratively in a management team, to communicate effectively, both orally and in writing, with different stakeholders, to evaluate ethical issues consistent with professional ethics and social responsibility and to demonstrate leadership qualities and entrepreneurial skills.

Subsequently, the cultivation of these skills warrants innovations in the teaching and learning for an accounting subject. Students often viewed accounting as mere numbers. This fallacy often leads to students to merely memorize their journal entries without conceptual understanding. Traditional method of lecture may aggravate this given that there are less opportunities to assess students' understanding. In addition, this does not allow for development of their soft skills. Active teaching and learning methods that centred on students may provide a solution to these predicaments. This study applied co-operative learning, a form of active learning pedagogy, to improve upon teaching and learning activities of this accounting course.

2. LITERATURE REVIEW

Cooperative learning is defined by Johnson, Johnson, and Smith (1991) as "*the instructional use of small groups so that students work together to maximize their own and each other's learning.*" They further identified five

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pillars in cooperative learning namely positive interdependence, individual accountability, interpersonal skills, face-to-face promotive interaction and processing out. These five elements need to exist for a successful cooperative learning in a classroom and also connote the benefits of co-operative learning. Slavin (1998) argued that co-operative learning may help students to reach out to and help each other. Peer feedback, reinforcement and support form the backbone of co-operative learning that revolved around students' interactions (Ajaja and Eravwoke, 2011).

Cooperative Learning				
Positive Interdependence "We need contributions from each of my team members if what we're doing to succeed"	Promotive, face to face interaction "How I think, talk and act towards my team members will influence how well we perform"	Individual accountability "Although my team members can help with the assigned task, my individual performance /contribution will shape my grade"	Social skills "Working effectively together as a team means that I need to improve my interpersonal skills"	Group processing "Our team has to reflect on its performance and think together about how we might improve"

Figure 1 Five pillars in co-operative learning (Foundation Coalition, 2008)

The lecturer's past teaching experience had shown that 'rote-learning' was a huge obstacle in ensuring students achieved the course learning outcome outlined for this advanced accounting subject. Stahl and Vansickel (1992) argued that co-operative learning can promote higher order thinking skills and thus negate 'rote-learning'. Carlsmith and Cooper (2002) also concurred arguing that students put more effort and learnt more from co-operative learning than traditional lecture and reading. More complex and challenging problems that promotes higher understanding can be presented to students in co-operative learning that was not otherwise possible if the students were to work their own (Michaelsen & Sweet, 2008).

3. METHODOLOGY

3.1 Data Sources and Collection

The action research was conducted on students undertaking Financial Accounting and Reporting IV in the Tunku Intan Safinaz School of Accountancy, UUM. The subject is a final year undergraduate subject for students enrolled in Bachelor of Accountancy. This subject had been taught pre-dominantly via traditional lectures and followed by tutorials. The tutorials answers were presented by individual students on the whiteboard. There were limited teaching and learning activities that allowed for students' interactions and co-operations.

There were 101 students who were enrolled in three classes out of seven that were offered in Semester 1 2015/2016. The students were then divided into their co-operative group according to their pre-requisite subject final grade, gender, hostel and race. Each co-operative group was limited to between three and five buddies per groups. There was general resistance to the idea of pre-selection of the buddies. However, they were informed that this is necessary to ensure that there was a proper mix of students in a group, in terms of level of understanding, ability and race.

The co-operative groups were advised in the first session of the importance of co-operative learning and the co-operative system. They were asked to appreciate their buddies and to look after each other. No one should be left alone to tackle any difficulties that relate to the course. Any problems should be promptly reported to the lecturer so that it could be addressed effectively and in time.

The co-operative system was applied during class activities, take home exercises, poster and oral presentations and project. The common group project contributed 10% of the total course carry mark. The other assessments involved individual tutorial submission, short quizzes and final examination. The students were also advised to

sit with their buddies throughout the semester. This was to help foster their relationship and rapport. They were also advised to allocate time after class for discussions either in person or using technologies.

Traditional lectures were kept to minimal lengths whereby they were conducted to introduce the conceptual and theoretical frameworks of each topic to the students. The lessons continued with application exercises. Students were required together with their buddies to apply the concepts and theories through in-class group activities. Oral and poster presentations, jigsaw, buzz sessions and peer feedbacks were incorporated into the co-operative activities.

Informally the performance of each co-operative groups was assessed mainly via their oral and posters presentations. For example, during poster presentations, their peers walked around and asked questions or explanations from the buddies manning the posters. Their peers then rated the posters and explanation by drawing stars on the posters. The lecturer tried not to correct any error on the posters but called upon other groups who had better answers to point the errors and to discuss it further. The lecturer role here was to facilitate not to dominate the discussions. The students were also given a small notepad each. The notepad was used as a logbook for the students to jot down their reflections on their groups and eventually the overall co-operative system.

3.2 Data Analysis and Techniques

During lessons, the lecturer observed significant improvements in terms of focus and interactions among the buddies, compared to traditional lectures. For example, the lecturer often had problems in getting responses for questions thrown during the lectures. However, during their oral and posters presentations, students were more upfront in their responses and were not shy to ask or clarify any issues. The co-operative learning environment may appear to be less threatening and safer to the students.

There were also ample opportunities to apply the concepts behind consolidations during in class co-operative discussions. These opportunities were not there during normal lectures. Students also appeared to understand more the linkage between the previous chapters to the current lessons. They were also able to explain in depth the concepts behind their journal entries and solutions, importantly in their own words, to their fellow buddies and lecturer.

In the middle of the course, the students were required to do a short reflection on a sticky note on their co-operative group and buddies. The question was “*What do you think of your co-operative group?*” A significant number of students showed positive reviews of their buddies and the work that they had solve together. The most common problems mentioned were lack of co-operation, non-committed buddies and also wanting to choose own buddies. These concerns were addressed by the lecturer during the following classes. The groups were reminded again of the benefits of co-operative learning.

At the end of the course, before their final exam a questionnaire was distributed to them. The questionnaire was adopted from Vasan, DeFouw and Compton (2009) who did a survey on perception of anatomical students on team based learning and Farell and Farell (2009) who studied accounting students’ satisfaction in co-operative learning. It assessed the perceptions of students on the co-operative system and teamwork or cooperative learning. Tsay and Brady (2010) found a significant and positive association between importance of grades to students, sense of achievement and their participations in co-operative learning.

4. RESULTS

4.1 Discussion on Results

The descriptive results (Table 1) showed the distribution of response towards all the items in the questionnaire. The results revealed mixed acceptance towards the co-operative system and teamwork. For example, 67% (agreed and strongly agreed) still considered lecture to be more beneficial towards their learning experience. However, on the other hand, 66% agreed that the co-operative system should be continued for the next batch of students. The response on the workings if their co-operative groups, was consistent with the self-reflection received midway through the course. They appeared to be 11% (strongly disagree and disagree) respondents who were not happy with their groups. Overall, the items that can be associated with peer interactions revealed positive responses (Item = 7, 8, 10, 16), with percentages of respondents answering agree and strongly agree, of more than 70%.

Table 1 Descriptive results from questionnaire

No	Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
1	TBL helped me increase my understanding of the course material	1%	7%	18%	48%	27%
2	I have completed 100% of the required reading	0%	5%	37%	50%	9%
3	I learn better from lecture presentations than small group.	0%	6%	28%	30%	37%
4	Solving problems in a group is an effective way to learn consolidations.	2%	10%	23%	48%	18%
5	I learned useful additional information during the TBL sessions.	2%	9%	29%	39%	22%
6	TBL helped me prepare for course examinations.	1%	13%	34%	37%	16%
7	The co-operative discussions allowed me to correct my mistakes and improve understanding of the concepts	1%	3%	17%	48%	32%
8	I have a positive attitude about working with my peers.	0%	2%	20%	50%	28%
9	The ability to collaborate with my buddies is necessary if I am to be successful as a student.	1%	1%	18%	47%	3%
10	Solving problems in a group is an effective way to practice what I have learned.	2%	5%	16%	52%	25%
11	My team worked well together.	1%	10%	15%	42%	33%
12	I contributed meaningfully to the TBL discussions.	1%	0%	23%	54%	22%
13	Most students were attentive during TBL sessions.	1%	4%	37%	36%	23%
14	I paid attention most of the time during the TBL sessions.	1%	3%	32%	46%	19%
15	The TBL format was helpful in developing my information synthesizing skills.	1%	5%	35%	41%	19%
16	There was mutual respect for other teammates' viewpoints during TBL.	0%	3%	16%	49%	33%
17	This learning method should be continued for next batch of students	4%	6%	25%	35%	31%

Perceptions of the co-operative system

No	Items
1	TBL helped me increase my understanding of the course material
3	I learn better from lecture presentations than small group.
4	Solving problems in a group is an effective way to learn consolidations.
5	I learned useful additional information during the TBL sessions.
6	TBL helped me prepare for course examinations.
17	This learning method should be continued for next batch of students
15	The TBL format was helpful in developing my information synthesizing skills.

Perceptions of teamwork

No	Items
8	I have a positive attitude about working with my peers.
9	The ability to collaborate with my buddies is necessary if I am to be successful as a student.
10	Solving problems in a group is an effective way to practice what I have learned.
11	My team worked well together.
12	I contributed meaningfully to the TBL discussions.
13	Most students were attentive during TBL sessions.
16	There was mutual respect for other teammates' viewpoints during TBL.

Figure 1 Items in principal components

The result from the questionnaire (Table 2) was further analysed using statistical software SPSS. Based on the principal component factor analysis, two factors (seven items each) were identified to represent 'perceptions of co-operative system' and 'perceptions of teamwork.' The internal consistency of the factors were analysed using Cronbach's alpha co-efficient. The value was 0.848 for 'perceptions of co-operative system' and 0.811 for 'perceptions of teamwork. The result were then analysed based on the students answers on their expected grade for the final examination. All respondents except 1 graded themselves C and above; 3 students =C, 38 students = B and 59 students = A. The results indicated that all respondents had positive perceptions on the co-operative systems and teamwork. The mean ratings were higher for students who believed that they will get higher grades.

The final analysis involved a comparative paired t- test between the grades of the students in the co-operative learning classrooms versus other students of which traditional lectures were conducted. The t-test showed a significant difference between the mean of the groups at $p = 0.0085$ (two tailed) and $p = 0.0456$ (1 tail). This may provide evidence that students who were subjected to co-operative learning had better performance. In terms of the failure rate, it was 6.48% for the co-operative groups and 3.70% for the paired sample. In terms of the highest grade score (A), the co-operative group recorded higher performance at 9.26% compared to the paired sample of 6.48%. It is important to note that it was not the main objective of this research to improve the performance of the students by implementing co-operative system. The main objective of this research was to improve upon the learning and teaching activities by introducing this pedagogical approach into Financial Accounting and Reporting IV course.

Table 2. Results of paired tests between co-operative and non-co-operative groups

GRADE	CO-OP (N)	NON CO-OP (N)	CO-OP (%)	NON CO-OP (%)	CUM % (CO-OP)	CUM % (NON CO-OP)
F	0	0	0.00%	0.00%	0.00%	0.00%
D	1	0	0.93%	0.00%	0.93%	0.00%
D+	0	2	0.00%	1.85%	0.93%	1.85%
C-	6	2	5.56%	1.85%	6.48%	3.70%
C	24	24	22.22%	22.22%	28.70%	25.93%
C+	16	20	14.81%	18.52%	43.52%	44.44%
B-	16	26	14.81%	24.07%	58.33%	68.52%
B	17	13	15.74%	12.04%	74.07%	80.56%
B+	10	6	9.26%	5.56%	83.33%	86.11%
A-	8	8	7.41%	7.41%	90.74%	93.52%
A	10	7	9.26%	6.48%	100.00%	100.00%
A+	0	0	0.00%	0.00%	100.00%	100.00%
SUM	108	108	100.00%	100.00%	100.00%	100.00%
Mean Co-operative	61.21%	T-test (2 tails)	0.08527			
Mean No Co-operative	59.78%	T-test (1 tail)	0.04557			

4.2 Implications and Future Directions

The results from the questionnaire appeared to imply that the students were indifference on whether the co-operative system would help them get higher grades. Vasan et al. (2009) who also found inconsistent result between their perceptions of teamwork and importance of grades attributed this to students' association with final examination and their own exam preparation rather than the teaching and learning methods that were used. Nonetheless, it was worth nothing that, the results showed that all the students had positive perceptions of the co-operative system. The result of the t-test of the paired sample (co-operative versus non-co-operative) revealed significant differences. Albeit having a relatively higher failure rate (grade C- and below) in the performance of the co-operative groups, it was worth nothing that the co-operative groups had a significant number of higher achiever (grade A). However, there is limitation in that this study did not control other factors that may influence the grades (i.e. current CGPA of students, study methods, marks of perquisites). It was not the main objective of the research to do so and the emphasis would be on the pedagogical approach

5. CONCLUSIONS

Slavin (1998) had also cautioned that co-operative learning can only be successful if the teaching and learning activities foster both a group goal and individual accountability. The lecturer experience in adopting the co-operative system into the teaching and learning activities had been positive and enriching. Upon reflections, there were a few issues in its implementation that warrant further improvement and a more thorough planning. The students also had shown a positive attitude in embracing co-operative learning. There had been more active participations by and interaction between the students in the overall learning process. The lecturers themselves must also be opened to the challenges and commitment that co-operative learning requires. The emphasis was never about the final grade of the students. It is hoped that the co-operative system had empower students to take control of their own learning and be more motivated in achieving the course learning outcomes. Vygotsky summed up the importance of co-operative learning aptly with his view that "what the child is able to do in collaboration today he will be able to do independently tomorrow" (Vygotski, 1987, p. 211). The results of this study gave more insights on the issues surrounding the implementation of an active teaching pedagogy. It also provides evidence on its effectiveness in improving teaching and learning activities and achieving course learning outcomes.

REFERENCES

- Ajaja, O. P., & Eravwoke, O. U. (2011). Effects of cooperative learning strategy on junior secondary school students' achievement in integrated science. *Electronic Journal of Science Education, 14*(1).
- Carlsmith, K. M., & Cooper, J. (2002). A persuasive example of collaborative learning. *Teaching of Psychology, 29*(2), 132-135.
- Farrell, B. J., & Farrell, H. M. (2009). Student satisfaction with cooperative learning in an Accounting curriculum. *Journal of University Teaching & Learning Practice, 5*(2), 4.
- Foundation Coalition. (2008). Positive interdependence, individual accountability, promotive interaction: Three pillars of cooperative learning. Retrieved from June 5, 2014 at http://www.foundationcoalition.org/publications/brochures/acl_piapi.pdf.
- Gillies, R. M., & Boyle, M. (2010). Teachers' reflections on cooperative learning: Issues of implementation. *Teaching and Teacher Education, 26*(4), 933-940.
- Johnson, D. W., Johnson, R. T., & Smith, K. A. (1991). Active learning: Cooperation in the college classroom.
- Jones, K. A., & Jones, J. L. (2008). Making cooperative learning work in the college classroom: an application of the 'five pillars' of cooperative learning to post-secondary instruction. *The journal of effective teaching, 8*(2), 61-76.

- Michaelsen, L. K., & Sweet, M. (2008). The essential elements of team-based learning. *New directions for teaching and learning*, 2008(116), 7-27.
- Slavin, R. E. (2010). Co-operative Learning: What makes group-work work? *The nature of learning: Using research to inspire practice*, 161-178.
- Stahl, R. J. (1994). The Essential Elements of Cooperative Learning in the Classroom. ERIC Digest.
- Tsay, M., & Brady, M. (2010). A case study of cooperative learning and communication pedagogy: Does working in teams make a difference? *Journal of the Scholarship of Teaching & Learning*, 10(2).
- Vasan, N. S., DeFouw, D. O., & Compton, S. (2009). A survey of student perceptions of team-based learning in anatomy curriculum: Favorable views unrelated to grades. *Anatomical Sciences Education*, 2(4), 150-155.