

Cooperative Learning: A Case Study on Teamwork through Community Service Project

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Abstract—Cooperative groups through much research have been recognized to churn remarkable achievements instead of solitary or individualistic efforts. Based on Johnson and Johnson's model of cooperative learning, the five key components of cooperation are positive interdependence, face-to-face promotive interaction, individual accountability, social skills, and group processing. In 2011, the Malaysian Ministry of Higher Education (MOHE) introduced the Holistic Student Development policy with the aim to develop morally sound individuals equipped with lifelong learning skills. The Community Service project was included in the improvement initiative. The purpose of this study is to assess the relationship of team-based learning in facilitating particularly students' positive interdependence and face-to-face promotive interaction. The research methods involve in-depth interviews with the team leaders and selected team members, and a content analysis of the undergraduate students' reflective journals. A significant positive relationship was found between students' progressive outlook towards teamwork and the highlighted two components. The key findings show that students have gained in their individual learning and work results through teamwork and interaction with other students. The inclusion of Community Service as a MOHE subject resonates with cooperative learning methods that enhances supportive relationships and develops students' social skills together with their professional skills.

Keywords—Community service, cooperative learning, positive interdependence, teamwork.

I. INTRODUCTION

ACTIVE pedagogy such as cooperative learning has shown to be positive in improving student performances in higher education as working in teams help group members to improve on a variety of learning skills. The benefits of cooperative learning as compared to traditional methods such as lectures are proven in getting students to encourage, understand, contribute, and discuss with one another.

The effective outcomes of using cooperative learning are that "students tend to exhibit higher academic achievement...better high-level reasoning and critical thinking skills, deeper understanding of learned material...greater intrinsic motivation to learn and achieve...more positive and supportive relationships with peers, more positive attitudes toward subject areas," [1]. According to Nilson, cooperative learning equally has assisted in enhancing a student's "interpersonal skills,... and psychological well-being" [2]. This finding indicates that students development through teamwork is not only limited to skills improvement but also

enrichment of the students psychosocial being with their environment. The learning method encourages group members to be concerned for and to value other team members as indicated by previous studies [3]. Students also have experienced greater levels of self-esteem from establishing personal and professional relationships [3]. In addition, group members acquire the conception of social cohesion by learning to care for their fellow team members [4].

Student performances in cooperative learning groups have proven to be a valuable experience and effective for learners than the common traditional classroom groups, where students work as individuals with very little interaction with other group members [3]. Furthermore, the five fundamental elements in team-based learning identified by Johnson and Johnson [3] are (i) *positive interdependence*, (ii) *face-to-face promotive interaction*, (iii) *individual accountability*, (iv) *social skills* and (v) *group processing* which emphasise the learner's continuous improvement academically through group cohesiveness. Positive interdependence supports common goal achievements in a team and promotes reliance on one another to succeed. Face-to-face promotive interaction fosters accountability and communication among team members through a feedback and reasoning process they give one another. Individual accountability advances mastering of the material individually and thus, be a stronger team player and group member. Social skills progresses team members to gain knowledge of leadership and problem solving skills along with developing aspects of trust building among them. Group processing allows team members to scrutinize problems arising and to make improvements besides constantly keeping a balance to achieve the team's set goals [3], [1]. Considering that cooperative learning as pedagogy has been in practice for long in advanced countries, the proven efficacy of the method has equally gained more practitioners in higher learning institutions in Malaysia.

II. COMMUNITY SERVICE AND LEARNING

A. Introducing Community Service in Higher Learning Institutions

To bring a competitive edge to the Malaysian education system with that of the world system, the Holistic Student Development policy was an initiative by The Ministry of Higher Education (MOHE) in aspirations to produce holistic individuals to fit into the national human capital development model. The New National Agenda sees lifelong learning to be vital in achieving the desired human capital, thus making it the 'third pillar' driving the development [5]. It is aimed that the exemplar human capital "has academic rigor and in addition,

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is morally sound.” [6]. Through the policy implementation, MOHE targeted to advance outcome-based learning which seeks to inculcate student-centred instruction even in co-curricular subjects offered in higher learning institutions [6].

Outcome-based education nurtures the spirit of lifelong learning as it equips students to be self-directed towards their own learning [7]. Students, generally over the period of their schooling years, would have developed a steady personalized pattern towards their studying. As they enter tertiary education, the pattern is one that is customary to “linking motive and strategy with perceived task demands and desired type of learning outcome.” [8]. Students that potentially do well are those that engage in ‘deep approaches’ to learning, which enables application of their learned subject matter as opposed to rote memorization [9]. This framing would fit tertiary education students approach to learning well “because these students attempt to maximize their understanding by reading widely, discussing, and reflecting on the topic, the deep approach to learning usually leads to structurally complex performances and to high grades.” [8].

Adapting the understanding to Ramsden’s study findings [9], the project based and teamwork nature familiar in community service make it possible to integrate a deep approach in students learning whereby they will perceive to use their knowledge, individual experiences and pursuit of interest through a process of internal learning [9] on the given tasks. Hence, MOHE’s inclusion of practical management of community projects as a compulsory General Studies subject (for both local and international students) in Malaysian higher learning institutions assists to promote self-reflective learning. Kegan’s principle of ‘self-authoring mind’ to meaning construction, which “integrates the thinking and feeling, cognition and affect, self and other” as fundament to development [10] explains to substantiate the subject’s addition. To reiterate, students learning through student-centered approach perform well when they are able to construct their own meaning and this is achieved when they are encouraged to think, plan, experience and reflect in their learning [11].

B. The Aim

In general, community service fosters empathy and a sense of responsibility towards members of the community in a society. The subject’s inclusion by MOHE equivalently strives for students to acquire and hone their leadership skills apart from becoming compassionate individuals towards the plight of other community members. Studies consistently have indicated that community service encourages “participatory learning” through its community engagement leading to effective learning happening as students have interaction with other learners, while connecting to the practical world [12], [13].

Educators teaching social work courses have put forth that learning through collaboration teaches students to also practice respect for diversity [14], which is to be considered a unique feature of the intended outcomes in cooperative learning. Hence, team-based learning which is guided by cooperative

learning elements nurture students holistic development. However, some may challenge the benefits as not all learners enjoy working in teams. The reason behind its resistance arising from possible individual conflicts. Nevertheless, due to the nature of teamwork in community service projects, inevitably students will find themselves having to work in large teams of (usually) more than 4 members as the projects are rarely performed individually. Thus, there is importance of understanding *role interdependence* and *task/sequence interdependence* in fostering a non-conflict teamwork environment and in assisting the team’s project success.

Based on a positive finding in the research on performance of flight crews by Robert Hackman, it has been proven that “teams, like individuals, experience a learning curve” and team familiarity helps in the improvement in the performance [15]. Thus, the formal cooperative learning structure which is based on steady groups that usually last from one class period to one semester or throughout a student’s undergraduate years progresses group cohesion, as a result the team members grow closer to one another.

In this study, the aim is to evaluate students’ *positive interdependence* particularly in their *role interdependence* and *task/sequence interdependence* and *face-to-face promotive interaction* in relation to team-based learning through community service projects. The exploration is to determine the internal learning process that has taken place through teamwork with external members.

III. METHOD

The case study is based on the March 2015 semester students (in their final year) who have undergone the compulsory MOHE subject. The community service subject is taught to undergraduate students based on a one hundred-percentage coursework component. Students are grouped into formal cooperative teams of 6-8 members and work together for a period of 12 weeks. The community service project requires a series of tasks for the teams to complete to achieve their respective projects’ aims. Teams prepare a written proposal of their project, raise funds to execute the project and perform a post-project oral presentation (debrief). Individually, the students are required to document personal reflections on the community service exposure and teamwork experience.

A. Procedure and Participants

A thematic content analysis was done on selected 5 students’ personal reflective journals that were submitted as part of their coursework submission task via an online learning portal. The reflections written were based on a series of questions pertaining to individual learning and group learning benefits besides their general experience working as a team. The reflections were analyzed based on 2 specific categories from Johnson and Johnson’s elements of cooperative learning – *positive interdependence* and *face-to-face promotive interaction* to students’ community service project outcome. The samples of the personal reflections chosen to be analyzed had met the criteria in terms of theme inclusion in the

student's reflection, and attentiveness to detailed thinking towards the team experience throughout the 12 weeks of project planning and execution. Another method that was included in this study was the structured interview. The 8 participants were made up of project team leaders and randomly selected team members of the 3 different projects that were executed in the semester. The participants were asked 7 questions related to *positive interdependence* and *face-to-face promotive interaction* as well as on *role interdependence* together with *task/sequence interdependence*. The terms that were to be used in the interview session and the respective definitions were given to them on a handout before the interview began for familiarization purpose. The interview responses were audio recorded with the participant's permission.

The methods used in the study to gather the findings have been useful to further substantiate the benefits of cooperative learning towards student learning and development.

IV. FINDINGS & DISCUSSION

A vast amount of literatures in cooperative learning point out that the pedagogy has produced positive results in engaging learners as the active learning method encourages communication and stimulates interaction. Prior studies results have proven that learners acquire *positive interdependence* and benefited from *promotive interaction* to become responsible towards their own learning and of their peers. This has been achieved as the learners teach one another the material, engage in discussions to solve problems using individual skills and personal strengths, together with cultivating reliance on one another to accomplish their joint goals [2]. In this study, the findings have contributed that teamwork undertaken in community service was able to foster *positive interdependence* and *promotive interaction* among the team members. Moreover, the team cohesion was dependent on *role interdependence* and most team members agreed that *task/sequence interdependence* did equally contribute to the overall success of the project executed.

A. Thematic Content Analysis

The findings in Table I indicate student responses on the shaping of *positive interdependence* and *promotive interaction* through the teamwork experienced in their community service project undertaken for the semester. The student responses were based on these reflective prompt questions (pertaining to):

- a) *Positive interdependence* - What was your role? What were your strengths as a team member? What were your weaknesses? Did you manage to overcome these hurdles over the course of this project? How (if yes)? What was the work process flow like? Describe how you worked as a group.
- b) *Promotive interaction* - What did you learn from working as a group? Give one specific example of something you learned from the group that you probably wouldn't have learned working alone.

The student responses show that teamwork undertaken in community service does create a *positive interdependence* for the members. The students have been able to gain positive insights about their individual roles that impact the team's learning and goal achievement. The personal responses reflect that individual team members see the relation of their personal growth as closely related to other team members' encouragement. In the process, some of the students were successful to distinguish their particular strength and weakness. The findings suggest team members have also revealed that they are to act responsibly towards their peers, otherwise the team and project's goals suffer the consequences.

In terms of *promotive interaction*, team members have responded that they importantly have learnt to encourage, teach, and collaborate with one another to ensure the smooth success of their project. Team members have agreed to the benefits that the spirit of togetherness, which has assisted them to come up with alternative strategies in problem solving to the success of the community service project. The diverse feedback promotes much interaction among the members while allowing them to be open-minded to conflicting views to subsequently be accepting of the best reasoning, and to be analytical prior to a decision being made. This has encouraged team members to exercise critical thinking in problem solving. Consequently, the team also becomes accountable for the decisions made as a group as the goals set were to primarily benefit the respective members of the social organization that they were assisting through the project.

As evident, teamwork in community service has shown constructive learning on an individual and group level.

B. Interviews

There were 8 interviews that were conducted with the 3 project team leaders and another 5 participants who were team members that were randomly invited to participate through a walk-in interview. The questions centered on the need for team cohesion and collaborative relationship. Participants were additionally interviewed on the relevance of *role interdependence* and *task/sequence interdependence* specifically to the success of their respective community service project. These elements are a subset of *positive interdependence*. The definition for *role interdependence* refers to "specific roles assigned to team members for the team to function" whereas *task/sequence interdependence* is "where one member must complete the task before the next task can be completed [16]. The findings of the interviews have demonstrated that both *role interdependence* and *task/sequence interdependence* contribute to the large success of the community service project as shared by the participants in Table II.

TABLE I
RESPONSES FROM STUDENTS PERSONAL REFLECTIVE JOURNAL

Student	Community Service Project	Positive Interdependence	Promotive Interaction
A	Orphanage – organized a half day visit, provided lunch & activities during play time	<i>I have a fair share of weaknesses to deal with... I had expected everyone in the team to be on the same track of a decision that was made out of our consensus... I blamed myself for expecting every member to have the same understanding towards that task that we were carrying out. It turned out that the problem was not on the explanation of the task but rather some of them kept quiet and kept their thoughts to themselves when they actually had a different view of it.... It does not matter whose fault it was, but it gave me a lesson that I should never assume that everyone thinks or interprets things the same way. I should also always encourage team members to speak up even though our ideas may differ. We can always learn to agree to disagree. Overall, I had fun being a part of Rangels and most importantly, I am grateful of being able to do something for the community especially doing it together with my classmates.</i>	<i>Smoothly, the process of our project flowed as planned and scheduled. The only thing that had slightly delayed our schedule was the waiting for confirmation of visiting day from the Home. As mentioned above, being a team player I had to constantly listen to what my fellow members have to say as well as contribute ideas to the project. This is because of the role that I played in my team, it was mostly about communications. Thus I have to ensure that I listened and received each opinion and feedback carefully, in order to deliver them consistently within the team and external parties... Through this subject, I am so happy that I am lonely no more! This subject has given me the opportunity to carry out community services with my classmates, in a team, sharing the same contributing spirit and objectives.</i>
B	Animal shelter – organized awareness campaign & dog adoption	<i>I was responsible in handling task delegated by negotiating and proposing sponsorship to the respective targeted sponsors. Furthermore, I was also active in participating in group discussions by sharing constructive ideas and point of view. One of my weakness is that I am a sensitive person. When I was rejected by the sponsors approached, I took it to heart and was spirited by the progress of things. However, I was able to overcome this hurdle through the encouragement and teamwork by my teammates.</i>	<i>I learn that as a group, we work better than individuals, especially in problem solving. By seeing things from different perspective and critical analysis, we make the best decision through working in a group. For instance, we faced difficulties in the execution of our project due to venue constrain. However, as a group we sat down and thought of various alternatives as contingency in the case if our initial plan did not work out.</i>
C	Refugee children – organized a full day visit & taught basic English, Maths & games at the learning centre	<i>Overall, the challenges for completing the community service project were various and required much coordination from each of the members. The experience was invaluable but very fruitful... It was perhaps one of the most difficult things to come up with, as we had to engage with children of various ages (7-17)...The process to design and refine this idea came from having several iterations of the proposed activity during group meetings. Through the consultation with several of my group members, the finalized form of my own proposed activities came through. The overall roles for each of the members vary as we had to help each other to be concise in our planning as time constraints were a big factor.</i>	<i>To be more precise, I learned that pre-existing friendships were not helpful to forwarding discussions. In particular, we all had to adapt a sort of 'professional' approach when discussing our project goals and outcomes, putting aside personal opinions of others in order to reach a common goal. Over time, the team members (as I had observed) gradually learned to evaluate other people's proposals in an objective manner... What I have gained from the group is that diversity in thought opinion often provides a free flow of ideas that I would otherwise not obtain from doing the work myself. An example was to get the opinions of my team members if the math questions were too hard for the children or too dry of an activity. I was stuck often in trying to conceptualize the activities, but with the help of others and their diverse ways of thinking and approaching problems, I was able to get input to forward my own working process. As for how I work, I am typically critical of details to do with the context of a particular event or project. For example, I would often criticize or question suggestions that do not adhere to time constraints or are too far-fetched. I am a very pragmatic person, in that I often would consider the smaller details a tad bit too much which could hinder the whole discussion process. Again, these qualities are not a secret to my team members even prior to executing this project.</i>
D	Refugee children – organized a full day visit & taught basic English, Maths & games at the learning center	<i>As for weaknesses, I do not think that I was as motivated throughout this assignment as I should have been, which may have caused the group to also lose some drive as well. However, with the help and motivation of particularly Zan and May, I was able to regain my drive and we finally managed to pull off an activities day that the children at the center seemed to have enjoyed. It made me think about what the term 'teamwork' truly entailed, and that if you surround yourself with good people, you too, can find strength in their presence.</i>	<i>Our group made decisions as a team, and this is to ensure that everyone's limits in the groups are taken care of, and that everybody is on board with what is going on. For example, when we had to make the difficult decision to drop the Teach For Malaysia proposal early on, there was a healthy debate among everyone before we eventually decided to pursue other opportunities... People come in different shapes and sizes, and there are definitely different strokes to different people. Our team in particular is made up of people from different races and nations, and this definitely brought on some differences in values. Along with the usual differences that come from being human, I learned tolerance and patience when it came to people...I also learned about team building, and how to maximize the efficiency of our team as a unit if we played to each other's strengths.</i>
E	Animal shelter – organized awareness campaign & dog adoption	<i>Being hardworking and responsible was one of my strengths as a team member. I made sure that I completed my job tasks responsibly, so that I would not have to burden my teammates with the work that was only half done or wrongly done. Besides that, I was also a very punctual person. I finished the tasks given to me on time, as in no delays in meeting the deadlines. I also made sure that I was always on time when I had to meet up with my teammates for discussion or execution of the activities. Another strength that I had would be I am a team player kind of member as I believe that every team member plays a critical role in the team's success.</i>	<i>I've learnt the importance teamwork as a group. It is learnt that working as a team is able to accomplish more than working individually. Teamwork creates higher quality outcomes for the project which are efficient and effective. This is because the more people working on a project, there are actually more ideas, skills and manpower available to accomplish the project assigned. The diversity of the skills and talents that all the members possess no doubt had enhanced the project's outcome. Besides that, with the manpower of seven people definitely helped the project to be done faster than only one person working on the whole project. One specific example of something I've learnt from the group that I wouldn't have learnt working alone is the mutual support among group members.</i>

TABLE II
INTERVIEW RESPONSES ON ROLE INTERDEPENDENCE & TASK/SEQUENCE INTERDEPENDENCE

Student	Role in Team	Role Interdependence	Task/sequence Interdependence
F	Organizing team member	<i>I think it is very important...there were no duplication of duty...</i>	<i>Equally important...let's just say.. Jiuan had to seek for venue first, and then only I can seek sponsorship...</i>
G	Organizing team member	<i>Well,so there has to be some structure...there has to be specific roles that have to be well defined for a project to go forward...</i>	<i>In our case, we had to depend on the people liaising with the social organization before we could proceed to doing the rest...</i>
H	Team Leader	<i>Yeah..., it's important because each of them need to do their own parts,...one in sponsorship....activities for the children...administration...other specific roles, then only we can complete the task.</i>	<i>Yeah, it's also important because if you cannot finish one task you can't move on to another. Because community service requires planning.</i>
I	Organizing team member	<i>It is important in any project, but more so in community service kind of projects because you need to be very specific in what you do...knowing what your part is in the team will help smooth out the whole process...it helped us to be more synchronized and on target.</i>	<i>It depends, during the planning process... for us. You have to expect the worst...there must be contingency...if one task is not completed then we look at it...if not it will delay the whole process...</i>
J	Organizing team member	<i>For me...I believe it was very important, each of us were given specific tasks. If we didn't perform well, then it will effect...the entire project. It will actually help smoothen the process of teamwork in executing the project.</i>	<i>For us...i don't think there is a specific task interdependence because we all execute it at the same time...we did not need it...not for this project.</i>
K	Team Leader	<i>I think in a healthy team it is very important because everyone has their own strengths...</i>	<i>In the case of our community service project, we had a lot of task interdependence...especially when it comes to meetings with the specific social organization... some of us saw the head of the charity ..there were a lot of assigning work,...then we drafted our report ...definitely a sequential process...</i>
L	Organizing team member	<i>I think it is important because we must know what is our own role...if not, we will be doing the same thing again and again...or maybe there are some important task that nobody is doing...</i>	<i>Not everything can be done at the same time. Some require planning, then only execution.</i>
M	Team Leader	<i>There were only 7 of us, so everyone holds an important responsibility...so, I think the distribution of the roles are very important...to produce a team with maximum efficiency.</i>	<i>It did not happen in my project because we don't rely on each other task to proceed...we can still do our work...even if the others are still doing theirs...</i>

The interview responses strongly support that particular roles assigned in a community service project creates individual accountability and assists in the functioning of the team to reach the project outcome. The specific role assigned to each team member similarly ensures that everyone in the team contributes towards achieving the project's aims. This also creates answerability to problems faced in the process of achieving the project goals. *Task/sequence interdependence* when applicable to the individual community service project shows that members learn to organize their work order to avoid any delays or setbacks besides augmenting good work ethics. 2 participants (student J and student M) had felt that tasks did not have to be completed sequentially but can be accomplished parallel wise by the team members. However, either it can be inferred that the participants felt the roles they had were independent of each other and thus, members had more liberty to make decisions alone, or the easy familiarity established from year 1 of their undergraduate studies at university facilitated their *promotive interaction*. As a result, the interviews indicate cooperative teams have a grown dependence on their members to see their project aims achieved. The project encouraged team members to communicate, to be in sync, and to perform tasks efficiently as they were organizing activities for the underprivileged in society.

V.CONCLUSION

Teamwork based learning introduced in community service projects do assist in enhancing the learner's communication and collaborative skills. The active pedagogy applied to the

MOHE subject develops sound reasoning to problem solving and enhances a positive attitude towards the community service project itself that was executed. The *positive interdependence* and *face-to-face promotive interaction* established in cooperative learning concurs with MOHE's aims to introduce self-reflective education where the learner takes a positive step forward to their own learning by learning alongside others.

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