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Students Team Achievement Division

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Abstract

Student Team Achievement Division (STAD) is one of the cooperative learning methods that involves small groups in which each member of the group works together on a common task to achieve the common goal. STAD was carried out using Kemmnis and McTaggart's Participatory Action Theory, among first semester students to evaluate students' attitude towards tourism geography subject. Achievement test was compared between the experimental group and control group using quasi pretest and posttest via experimental design on the students. Attitude inventory scale and team work satisfaction scale were measured to understand the students' feedback on STAD teaching technique. The experimental group of STAD students rated highest statement on "*My team develops clear collaborative patterns to increase team learning efficiency*" (*M*=4.45, *SD*=0.73). In team work participation evaluation, the experimental group respondents this statement highest "*Interacting with the other members can increase my motivation to learn*" (*M*=4.43, *SD*=0.73). This research concluded that STAD technique improved students' achievement test (t-value= 9.01*), attitude and teamwork among the experimental group students.

Keywords: Cooperative Learning, Group Investigation, Students' Team Achievements.

Introduction

Accomplishing learning objectives are the ultimate aim of teachers by the means of diverse theories and techniques. In today's prevalent realm of vast information sources using multiple communication technology help teachers to achieve the learning objectives faster. Further, students could improve faster because they are exposed and engagement on the learning resources from their teachers, friends and even friends through self-learning experience. Hence, cooperative learning is group learning is seen as one of the important options in the pedagogical approach in a classroom culture environment (Wyk, 2013). Seasoned educators who are well versed in teaching and learning pedagogy could form interesting learning activities in engaging students' interest and focus towards lessons.

Cooperative learning is most useful and desired amongst Malaysian students in primary school, secondary school and even in colleges. They found to be effective and meet their collective learning culture. Stevens & Slavin, (1995) do believed through their researches that it provides a positive impact to develop team building.   It was proven that students participated in cooperative learning have higher self-esteem, improved thinking level and develop a greater sense of intellectual power (Slavin, 1994).   Students are able to adapt to a variety of dynamic atmosphere.   They develop higher confidence level, more resistant to change and accept differences and inequality of gender and culture with a broad mind and positive thinking.

Educationists have proven that students who had worked in cooperative groups did better on test, proactive, stronger verbal skill, increase reasoning power and escalate critical thinking skills. Further, it is believed students are seriously involved in conversation, argument, and debate able to engaged higher learning retention and improved higher order thinking among them because of team involvement during task (Johnson & Johnson, 1989).

Literature Review
Cooperative Learning
Cooperative learning is organized and a good plan for diverse group of students.   Each individual is collectively dependent on each other to achieve the learning objectives postulated by the teacher. The group members are accountable for each other's accomplishment and failure (Alijanian, 2012). Team members help tutor their team members in the group. It is an approach to self-group work that minimizes the occurrence of those unpleasant situations and maximizes the learning satisfaction that eventually results from working on a high performance team (Ku, Tseng, & Akarasriworn, 2013). It is part of group teaching or learning techniques where students interact with one another to acquire and practice the elements of subject matter to meet common learning goals.

Students' Team Achievement Division
Students' Team Achievement Division known as STAD is one of many teaching methods in cooperative learning technique. Students in STAD methods are assorted with such variety of achievement levels, capabilities, talents, gender and ethnicity (Slavin, 1994). Team recognition is intricate through STAD.   It also stimulates group responsibility to foster individual learning (Ocampo & Bascos-ocampo, 2015). Some of the evaluations in STAD than can be used are group recognition, individual improving scores, quizzes, group study, or lecture presentation (Slavin, 1995).

Most of the time in STAD, instructors will form students in a small group that is usually less than four individuals. For a start, the instructor will present a topic lesson. Then, the instructor will create a task or an activity to stimulate the students' teamwork of a start. Later, a bigger activity is given with an assessment or a series of assessment. This task the students were told to work in a team. They are required to work with their teams to make sure that all team members have mastered the lesson. All students are required to help each other using multiples learning resources such as online, mobile learning applications, books, maps and many other sources that are comfortable for them to enhance group discussion and develop creativities (Tiantong &

Teemuangsai, 2013).   Finally, all students will be given an individual quiz on the material that they have learned from their previous task and group members. This is an individual evaluation with no team work.   Students' quiz scores are compared to their own previous average performance. Points or merits will be presented on the basis of the degree to which students meet or exceed from their own earlier performance. These points are then summed to form teams' scores.   Teams that meet specific criteria may earn rewards towards the end of the task. Based on the discussion above, this study would like to investigate the effectiveness of the Student Team Achievement Division (STAD) on students' attitude and team work satisfaction towards Tourism Geography- DTM 2013 subject among first semester students at Polytechnic Sultan Idris Shah, Malaysia.

Methodology
The quasi experimental design was adopted to accomplish the objective of this research.   The Kemmis & Mac Taggart (1998) model was used to guide this research. Four steps were used in this research consisting of planning, acting, observing and reflecting. There were two groups of respondents, the control group students and the quasi experimental group of students. Pre-test and the post-test result will be evaluated between these two groups. The participating respondents in this study consist of students from two classes of Tourism Geography.   Both classes were under the same instructor and the same teaching assistant that will be teaching for these groups.   The experimental group consists of 43 students and the control group consists of 41 students. STAD was used in the experimental group for seven weeks.

Three research instruments were used, namely, 1) Achievement test. Two tests were developed and validated according to the Malaysian Polytechnic curriculum for the achievement test; 2) Attitude scale inventory (Ku et al., 2013); and 3) Team work satisfaction scale (Ku et al., 2013). Attitude scale inventory and team work satisfaction scale are using a 5 point scale, in which 1 represents "strongly disagree", 2 represent "disagree", 3 represent "neither", 4 represent "agree" and 5 as "strongly agree".

Selected topics were chosen within the duration of the experiment. During the first session the instructors presented the lesson. In the second session, the students were assigned in groups and team study. Students that are mastered with the materials will try to coach their team mates. Group and individual presentation were done actively. Recognitions and awards were given to teams and individuals for their improvement and active participation. It was given to stimulate positive learning attitude and teamwork spirit. While the slower ones need further enrichment in STAD such as rearrangement group partners to keep their spirit up. In contrary, the control group was taught using the traditional strategy on the same topics for the same duration. What were the similarities were, both groups received the same guidebooks, learning materials, quizzes, tests and assignments.

Findings and Discussion
T-test was used to compare the difference between control group and the experimental group in their pretest and posttest in the achievement test. Table 1 stated that during pretest the control group result for mean was 3.14 (*SD*= 0.51), while the experimental group mean was 3.11

(*SD* =0.49) with a low difference means of 0.3. However, after the intervention program using STAD, a post test was done after 7 weeks interval . The control group result for mean was 3.19 (*SD* = 0.33), while the experimental group mean was 3.78 (*SD* =0.40). This shows a larger mean difference of 0.59. The attitude means achievement score differences of 0.67 (*SD* =0.76) for experimental group was better as compared to the control group for attitude mean achievement scores was 0.06 (*SD* =0.65). Further, the result proved that the students' attitude score on pretest result and post test result was better for experimental groups with t-value of 9.01*. While the control group showed the *t*-value of -0.20. As a result, it proved that STAD activities on cooperative learning that were held for seven weeks did show improvement in students' attitude towards Tourism Geography among the experiment group.

Table 1. Score Result between groups

		Control Group	Experiment Group	Computed t-value
Pretest	Mean	3.14	3.11	-0.20
	SD	0.51	0.49	
Post Test	Mean	3.19	3.78	9.01*
	SD	0.33	0.40	
Attitude mean achievement scores	Mean	0.06	0.67	
	SD	0.65	0.76	

*Note. * level of significant at 5%*

Descriptive statistic was used to analyze the mean score, standard deviation and ranked to measure students' attitude to experiment group towards STAD on Tourism Geography. Tables 2 tabulate the result. The overall mean score was 4.052 reflecting the positive effect towards STAD technique on cooperative learning. The highest score was on the statement "My team develops clear collaborative patterns to increase team learning efficiency" (*M*=4.45, *SD*=0.73). This was followed by a statement "*My team members communicate with each other frequently*" (*M*=4.43, *SD*=0.90). "My team members encourage open communication with each other" (*M*=4. 32, *SD*=0.71). The lowest score was stated on "*My team trust each other and works toward the same goal*" (*M*=3.62, *SD*=1.11). Next was followed by a statement "*My team members share personal information to know each other better*" (*M*=3.69, *SD*=1.22). Third lowest score among all statements was "*My team members share culture information to know each other better*" (*M*=3.76, *SD*=0.95).

Table 2. Student attitude scores among the Experiment Group.

No	Items	Mean	SD	Rank
11	My team develops clear collaborative patterns to increase team learning efficiency	4.45	0.73	1
9	My team members communicate with each other frequently.	4.43	0.90	2
5	My team members encourage open communication with each other.	4.32	0.71	3
1	Communication with team members regularly helps me to understand the team project better.	4.27	0.73	4
20	The instructor acts as a referee when our members cannot seem to resolve differences.	4.23	0.79	5
15	My team members learn how other members wish to be treated and then act accordingly.	4.14	0.90	6
18	My team members share personal information to know each other better.	4.13	0.96	7
2	My team members communicate in a courteous tone.	4.09	0.99	8
3	My team is receiving guidance of the group project from the instructor.	4.08	1.03	9
4	My team is receiving feedback from each other.	4.07	1.06	10
6	My team members share their professional expertise.	4.04	1.07	11
7	My team has an efficient way to track the edition of documents.	4.01	1.01	12
8	My team sets clear goals and establishes working norm.	3.97	1.06	13
12	My team members clearly know their roles during the collaboration.	3.95	1.13	14
13	Getting to know one another in my team allows me to interact with teammates.	3.94	1.16	15
14	I trust each team member can complete his/her work on time.	3.90	0.98	16
16	My team members reply all responses in timely manner.	3.84	1.11	17
17	The support from the instructor helps my team to reduce anxiety among team members.	3.76	0.95	18
19	My team trust each other and works toward the same goal.	3.69	1.22	19
10	My team members share culture information to know each other better.	3.62	1.11	20
	Overall	4.05	0.89	

Note. Responses ranged from 1 (strongly disagree) to 5 (strongly agree).
   N= 84

After completing their posttest, the researcher further distributed survey forms to measure students' teamwork satisfaction among the experimental group. Students' were excited because they are able to develop a higher confident level. Table 3 provided students' response. The highest ranked statements proffered by experimental group students was "*Interacting with the other members can increase my motivation to learn*" (M=4.43, SD=0.73). This was followed by a statement "*I like solving problems with my teammates in group projects*" (M=4.23, SD=0.79).

Third in ranked was stated "*I have benefited from interacting with my teammates*" (M=4.14, SD=0.91).

Table 3. Teamwork satisfaction scale among the Experiment Group.

No	Items	Mean	SD	Rank
5	Interacting with the other members can increase my motivation to learn.	4.43	0.73	1
7	I like solving problems with my teammates in group projects.	4.23	0.79	2
4	I have benefited from interacting with my teammates	4.14	0.91	3
6	I enjoy the experience of collaborative learning with my teammates	4.12	0.91	4
2	My team members are sharing knowledge during the teamwork process	3.90	1.04	5
9	Working with my team helps me produce better project quality than working individuals.	3.81	1.13	6
10	STAD teamwork promotes creativity.	3.66	1.09	7
1	I have benefited from my teammates' feedback.	3.53	1.13	8
3	I gain STAD collaboration skills from the teamwork processes.	3.29	1.17	9
8	I like working in a collaborative group with my teammates.	3.24	0.93	10
	Overall	3.84	0.92	

Note. Responses ranged from 1 (strongly disagree) to 5 (strongly agree).
N= 84

Conclusion and Future Recommendation

In short, a STAD technique on structured cooperative learning approach embrace higher instructors' participation, teams' rotation roles, helpful peer interaction and conducive learning environment. STAD cooperative learning received strong favor, support and encouragement from both teachers and students in the Polytechnic Sultan Idris Shah. Students are more focus and increase self-motivation as their roles in the group being recognized by their peers.   For that reason, further training and continuous professional development need for instructors. Collaboration among instructors is highly useful to further enhance in class activities. Other techniques of cooperative learning need to be further explored and investigate such as online virtual games to increase students' excitement in learning. STAD technique is one of many ways in cooperative learning that is truly enjoying for students with the help of experienced instructors. This technique should be further promoted to teachers for classroom use. Besides, this approach blends and develops creativity amongst the students through direct connectivity and cooperation which empower fun learning and happy learning memories that is needed for most students.

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