Enhancing Primary School Students’ Social Skills Using Cooperative Learning in Mathematics

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Abstract

This research study was conducted on 1) development of social skills from activities based on the Cooperative Learning Model (STAD) and 2) measuring students’ achievement through the cooperative learning model. The set criteria was 80% of the students showing a ‘good’ behavioral level and 80% of students achieving 70% of the test scores. The target group of this study was 36 Grade 2 (Class 2/1) students of the Demonstration School, Khon Kaen University, Primary Section (Modindang) during the 1st semester of academic year 2011. The specific case learning form (one-shot case study) was applied. The instruments included: 1) 10 lesson plans under the cooperative learning model (STAD) on the topic of weight measurement, 2) the questionnaire for social skill observation classified into 4 levels, and 3) a test of learning achievement. The data analysis was done in percentage and means, and analysis of qualitative data was obtained from observation and action evaluation. For social skill evaluation, it was found that 100% of 36 students and the overall social skill were at a good level with the mean scores of 3.81, which met the set criteria. For learning achievement, 100% of the students achieved the mean score of 89.15%, which also passed the set criteria.

Keywords: Social skills, Learning achievement, Cooperative learning, Activities, Primary school students

1. Introduction

Demonstration School, Khon Kaen University, Primary Section (Modindang) is aiming at developing growth in intellect, knowledge, skills, processes, and moral and ethics in the students according to the National Education Act 1999. Section 6 states that the national education aims at developing Thai people to become a good citizen with readiness of the mind and body, knowledge, intellect, moral, and culture so that they are able
to live happily with others. In order to reach the target of the core foundation educational curriculum of 2008, the standards and indicators have been set for learners to learn and do. Teachers are to arrange activities that enhance knowledge, competence, and moral in each subject with details including 5 important competencies and 8 required characteristics. These competencies and characteristics are to be instilled in learners through various methods of instruction, activities and development.

The Office for National Standards and Quality Assessment (Public Organization) stipulates the framework for the third external assessment (2011-2015) for foundation education. In the fourth standard, learners should be trained to think and act according to Indicator No. 4.2, which says, “Learners are able to adjust themselves socially and use their life skills to appropriately solve problems and conflicts. This correlates to the 2008 foundation core curriculum in which learners’ competence is composed of life skills and ability to lead the normal daily living, manage problems and conflicts appropriately, work and live in the society with good relationships with others, adjust to the change of society and the environment in time, and avoid unwanted behaviours.

In order to live with others, the following social skills are important: dependence, support for mutual tasks, team work, attaining success, determination toward success, problem facing, communication, problem solving, decision making, self-management, and ability to interact with friends. Students at primary level are at the age of learning and expressing. They should be taught how to avoid “unwanted behaviours” in the social situations in classrooms. They need to be trained how to appropriately interact with others and acquire valuable skills for their future life.

Planning and designing the cooperative learning model (STAD) involves the steps in presentation of the lesson, which enhances cognitive development. Then in small group activities, social skills are promoted by members staying together and developing good interpersonal relationships. This enhances development of the affective area, forming good behaviors, required characteristics, and self-esteem.

Demonstration School, Khon Kaen University, Primary Section (Modindang) has a duty to arrange instruction that meets the target of the core foundation curriculum of 2008. Students are to be developed in their cognitive domain, knowledge, ethics, and moral. The researchers thus were interested to carry out a study on the cooperative learning model (STAD) in order to instill students with social skills and team working competence so that they will live with others happily in the future and acquire good academic achievements.

2. Research Question

How effective is the cooperative learning model (STAD) in instilling good social skills and good academic achievements of students?

3. Purpose of the Study

3.1 To develop social skills from the cooperative learning model (STAD) – aiming at over 80% of the participating students being rated with a good level of behavior

3.2 To develop students’ academic achievement – aiming at over 80% of the students receiving over 70% of the criterion.
4. Research Methods

4.1 The target group in this study consisted of 36 Grade 2 students from Form 2/1, Demonstration School, Khon Kaen University, Primary Section (Modindang) during the first semester of 2011.

4.2 The research instruments included:
- Ten mathematics lesson plans based on the cooperative learning model (STAD) on the topic of weight measurement
- A behavior observation form on 4 aspects of social skills, namely, interest and intention to participate in group activities, giving opinions, accepting others’ opinions, and determination to work
- An achievement test comprising objective 4-choice items and subjective items

4.3 The one-shot case study was applied as the research method:

\[
\begin{array}{ll}
X & O \\
X & \text{means learning activities in the cooperative learning model (STAD).} \\
O & \text{means the social skill evaluation results and students’ achievements.}
\end{array}
\]

5. Procedure

The researchers conducted the study as follows:

5.1 Prior to the activities designed in the lesson plans, the researchers held an orientation session for the students to inform them of the steps in each lesson, which included: 1) class presentation by the teacher and students doing activities based on teaching media used; 2) team study – each team comprising of 4 to 5 students studying the content cards or carrying out the assigned activity. The members had to do their best for their own team. The team members tutored each other to get to understand the subject content.

5.2 Learning activities under the cooperative learning model (STAD) involved the following approaches and steps:

5.2.1 **Learning step (of each lesson plan)** was composed of:
- **Class presentation** – The class learned the subject content presented by the teacher who chose suitable techniques, activities, and learning experiences for the students.
- **Team Study** – A team consisted of 4-5 students with different achievements and mixed sexes. Team members had to try to study the content cards and do the activity given in an envelope. Each member helped one another in doing so. The teaching media included content cards, activity cards, and answer key cards.

5.2.2 **Testing step** – After the content of weight measurement was taught, the students took the test which comprised objective 4-choice items and subjective items. Team members were not allowed to help each other in the test. Everyone had to do the test on his own.

5.2.3 **Team Recognition** – The scores from the test were computed for individual and team improvement. Team recognition or prize awards happened when the team scored higher than the set criteria. The improvement scores of each student and team were computed from the differences of the test scores and the base score of each student. The criteria are as follows:
Table 1 Improvement points

<table>
<thead>
<tr>
<th>Quiz Score</th>
<th>Improvement Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 10 points below base score</td>
<td>0</td>
</tr>
<tr>
<td>10 points below to 1 point below base score</td>
<td>10</td>
</tr>
<tr>
<td>Base score to 10 points above base score</td>
<td>20</td>
</tr>
<tr>
<td>More than 10 points above base score</td>
<td>30</td>
</tr>
<tr>
<td>Perfect paper regardless of base score</td>
<td>30</td>
</tr>
</tbody>
</table>

5.2.4 Recognizing Team Accomplishments - The test scores were computed to analyze the improvement of each student and of each team. Team accomplishment happened when the scores were higher than the criteria set.

Table 2 Criteria for recognizing team accomplishments

<table>
<thead>
<tr>
<th>Criterion (Team Average)</th>
<th>Award</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 - 19</td>
<td>GOOD TEAM</td>
</tr>
<tr>
<td>20 – 24</td>
<td>GREAT TEAM</td>
</tr>
<tr>
<td>25 and over</td>
<td>SUPER TEAM</td>
</tr>
</tbody>
</table>

The students agreed for awards of each level, namely, GOOD TEAM, GREAT TEAM, and SUPER TEAM.

5.3 Assessment of social skills was achieved by observing the behaviors of students during the activity. Individual social skills were assessed after completion of each lesson. The social skills observed were:

- Interest and intention to join the team activity – The students showed unity in team participation, dividing roles, learning what target it was, planning. Members did not play around or chatted while working.
- Giving opinions – Team members discussed and consulted one another to find an approach for their activity.
- Accepting others’ opinions – Team members learned to wait for their friend who was talking to finish giving his idea, considered the idea and accepted it based on reasoning.
- Determination to work – Team members expressed their attempts, their devotion and inner strength to carry out the work until it was completed.

The criteria for social skill evaluation consisted of 4 quality levels:

- 4 means very good
- 3 means good
- 2 means fair
- 1 means requiring improvement.
6. Findings

6.1 Learning achievement of the topic of weight measurement was analyzed from result of the test constructed by the researchers which comprised both objective and subjective items. The full score was 20. The statistics used included percentages and means which were compared with the criteria.

Table 3 Conclusion of mathematics achievement test

<table>
<thead>
<tr>
<th>Total number of students</th>
<th>Scores</th>
<th>Mean</th>
<th>Number of students getting over 70%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Passing Criteria 70</td>
<td>Highest</td>
<td>Lowest</td>
</tr>
<tr>
<td>36</td>
<td>20</td>
<td>14</td>
<td>20</td>
</tr>
</tbody>
</table>

From Table 3, we can see that the highest score was 20 and the lowest was 12. The mean score was 89.13. All 36 students (100%) got over 70%.

6.1. Social skill improvement scores

Table 4 Result of social skill assessment

<table>
<thead>
<tr>
<th>Social skills</th>
<th>Average quality level (4)</th>
<th>Number of students passing Level 3 and over</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Interest and intention to join the team activity</td>
<td>3.89</td>
<td>36</td>
</tr>
<tr>
<td>2. Giving opinions</td>
<td>3.53</td>
<td>36</td>
</tr>
<tr>
<td>3. Accepting others’ opinions</td>
<td>3.97</td>
<td>36</td>
</tr>
<tr>
<td>4. Determination to work</td>
<td>3.83</td>
<td>36</td>
</tr>
<tr>
<td>Average</td>
<td>3.81</td>
<td>36</td>
</tr>
</tbody>
</table>

From Table 4, it was found that the average social skill score was 3.81. All of the 36 students (100%) passed at the good level (3) or higher. The average scores of the 4 aspects were: 1) accepting others’ opinions - 3.97; 2) interest and intention for team activity - 3.89; 3) determination to work - 3.83; and 4) Giving opinions - 3.83.

7. Discussions

The study of social skill and students’ achievements development through the cooperative learning model (STAD) of Primary Level 2 students can be concluded as follows:

7.1 Social skill assessment – 36 students passed the criteria in social skill behaviors (100%). Overall social skill evaluation was at a good level with an average score being 3.81, which met the set criteria. All of the students (100%) learning from the 10 lesson plans of the cooperative learning model (STAD) on the topic of weight measurement showed a good level of social skills and higher. The results of this study are in line with the concept proposed by Slavin (1990) who said that cooperative learning models assist learners to use their competence to solve various problems. Learners have to realize first of all that they are part of the team. All have an equal chance to bring the group towards success, which is not any one’s action. The group working behaviors help to build social skills. The required social characteristics are: 1) interest and intention to join team activities, 2) giving opinions by group discussion and consultation for an approach to work, 3) accepting others’ opinions, which trains team members to wait and listen to others, consider others’ opinions and accept them based on reasoning, and 4) determination to work, which trains team members to dedicate themselves, putting their inner strength and attempts to carry out the activity towards the aim.

7.2 In learning achievements, all of the 36 students passed the criteria (100%) with the average achievement of 89.15%, which met the set criteria. This correlated to the findings of Suladda Loifa (1996) who reported
that once students know the team reward and team goal, students are encouraged to attempt to learn and achieve their goal. Students try to adjust their behaviors for team success. The sense of unity builds a positive strength to the members who learn from one another in a dependable style, enabling them to develop their competence and understand the subject content.

References


