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Let's Have Cooperative Learning for Lessons!

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Abstract

One cannot assume that learning will necessarily take place just because children are doing group work. To ensure that productive learning takes place, there is a need to infuse elements of cooperative learning into the group activities. In this article, the key principles and structures of cooperative learning as well as the benefits of using cooperative learning are discussed. Some suggestions on the use of cooperative learning, together with classroom examples are also presented.

What is Cooperative Learning?

As a teacher, you might have observed that your students can get into groups naturally for interactive play during recess. They can display a high level of engagement and this may prompt you to think of introducing group work in your primary social studies lessons to maximise your students' interest and learning. However, just by having students in groups and expecting them to work together do not mean that learning will necessarily take place. To ensure learning is productive, you need to integrate elements of cooperative learning into group activities. Cooperative learning is an umbrella term for a set of instructional models that requires students to work and interact together in small groups for the promotion of individual and group members' learning (Kagan, 1994; Morton 2008; Slavin, 2011). Although such instructional models can vary in how cooperative learning is structured, all of them have common essential elements that make them cooperative in nature. According to Johnson and Johnson (1988, 1989, 1999a), these elements are positive interdependence, individual accountability, face-to-face promotive interaction, social skills and group processing.

a) *Establishing Positive Interdependence*

For cooperative learning to work, teachers need to structure positive interdependence. Students need to learn that group success depends on the efforts and success of all group members. Teachers can foster positive interdependence through goal interdependence ("Make sure you and the rest learn the materials"), reward interdependence ("Each group member will get a reward if all the group members attain 90 plus for their test"), resource interdependence ("Each one of you will receive a part of the materials") and role interdependence ("Take on the role of either a reader, a checker, an encourager or a elaborator in your group").

b) *Ensuring Individual Accountability*

Individual accountability ensures that every group member contributes to the group effort and is valued for his or her contribution. Without individual accountability, some students may freeload, which can lead to resentment

among other hardworking members and they may lessen their effort to avoid becoming "suckers". Teachers can promote individual accountability by giving an individual test on a similar topic following group work, randomly choosing one student's work to represent the entire group, or assigning each student to do a specific part of a group activity.

c) ***Promoting Face-to-Face Interaction***

Face-to-face interaction with one another can promote individual student thinking during group work. Students need to engage in purposeful talk by explaining to others how to solve problems, discussing new knowledge or linking the present knowledge with prior knowledge. To have meaningful interaction, teachers should limit group size, build individual accountability, teach social skills and award rewards to groups.

d) ***Teaching Interpersonal Skills***

Effective cooperative learning requires students to be equipped with the necessary social skills. Teachers can begin the school year by teaching basic social skills such as speaking in quiet voices and turn taking before moving to more advanced social skills such as encouraging participation in the later part of the school year.

e) ***Incorporating Group Processing***

Group processing provides students with opportunities to discuss what and how much they have learnt during the lessons, how well they have worked together and how well individual members have mastered the pre-requisite social skills. When students face difficulties in working with each other, they should participate in more group processing to identify, define and solve their problems together. At appropriate lesson intervals, teachers can set aside five to 10 minutes of class time for students to write or talk about their group interactions (Johnson, Johnson & Holubec, 1998).

Why Use Cooperative Learning?

Considerable research studies have reported that cooperative learning, when implemented well, promotes academic achievement in a wide range of subjects and at various levels of schooling (see reviews by Johnson and Johnson, 1999a; Slavin, 1995; Webb, 2008). However, it is rather unclear why and how cooperative learning influences achievement, and under what conditions it has these positive effects (Slavin, 2011). This uncertainty, according to Slavin (2011), could be a result of researchers investigating the effects of cooperative learning on achievement from four different theoretical perspectives – motivationalist, social cohesion (or social interdependence), cognitive developmental and cognitive elaborative theories.

For researchers who adopt the motivationalist perspectives like Slavin (1995), the focus is on the reward or goal structure under which students operate, which creates a situation that motivates individual students to encourage and help their group mates to learn so that they can succeed in attaining their own personal goals. In contrast, social cohesion (social interdependent) theorists such as Sharan and Sharan (1992), Aronson and his colleagues (1978) believe that the benefits of cooperative learning arise from group cohesiveness. Group members help each other learn as they identify and care about the group, and as the task is structured in a way to promote productive interactions among group members.

Researchers, influenced by cognitive-developmental and cognitive elaborative theories, look at cognitive explanations for the cooperative learning effects. They focus on student-student interactions that determine learning and achievement. Influenced by eminent psychologists such as Piaget (1926) and Vygotsky (1978), the developmental theorists suggest that interactions promote student mastery of critical concepts with the extension of their existing understanding through peer feedback. Somewhat related to this perspective is the cognitive elaboration perspective, which holds that students learn and remember materials better when they are able to explain them to others during group interactions.

In addition to the positive impacts of cooperative learning on academic achievement, there are also non-academic benefits of cooperative learning. Studies have reported closer friendship among students of different ethnic backgrounds, better self-esteem, greater altruism and cooperation, more task engagement and increased liking for subjects, school and classmates (Slavin, 1995). As students work in groups, they learn to understand and appreciate individual differences and display greater commitment to civic and citizenship values such as freedom of speech, fairness and equality (Morton, 2008) which can stand them in good stead as citizens.

Cooperative Learning Models

There are many cooperative learning models (Sharan & Sharan, 1999) and in this article, the Kagan's Structural Approach, Johnsons' Learning Together, Sharans' Group Investigation, and Aronson and his colleagues' Jigsaw model will be discussed.

a) *Structural Approach*

The Structural Approach was developed by Spencer Kagan (1994). The approach is based on the use of structures which are "the distinct ways of organising the interactions of individuals in the classroom" (Kagan, 1994, p 5:1). The smallest unit of a structure is called a step or an element. It is the most basic unit of classroom behaviour (Kagan & Kagan, 1999) comprising the actor and the action. Structures are made up of elements and different combinations of elements can form different structures to suit the teaching contexts and learning objectives. The structures are categorized according to their functions which can be class-building, team-building, communication building, information exchange, mastery and higher order thinking (Kagan, 1994; Kagan & Kagan, 1999;). Because of the varied functions, it is therefore crucial to select the appropriate structures to achieve the lesson objectives. As structures are content free, they can be used repeatedly for different subject content and grade levels and at different points of a lesson. Some examples of structures that can be used for primary social studies teaching are think-pair-share, think-pair-square, round table, round robin, send-a-problem and numbered heads together (Kagan, 1994, see Figure 1). For more of Kagan's structures, refer to his 1994 book, "Cooperative Learning".

Figure 1: Some Examples of Cooperative Learning Structures

Structures	Steps or Elements in Structures	Purposes	When to Use?
Think-Pair-Share	• Teacher poses problem • Everyone thinks • Students pair up and share • Students share with class what their partners think	Promotes thinking, sharing and cooperation	An informal cooperative learning structure which can be used at any time of the lesson
Think-Pair-Square	• Teacher poses problem • Everyone thinks • Students pair up and share with one another • Pairs will square up, that is, form a group with another pair and share with the other pair	Promotes thinking, sharing and cooperation	An informal cooperative learning structure which can be used at any time of the lesson
Round table	Students in groups take turns to write down their responses on paper without talking to one another	Sharing of information and cooperation	An informal cooperative learning structure which can be used at any time of the lesson
Round robin	Students in groups take turns to state their responses orally	Sharing of information and cooperation	An informal cooperative learning structure which can be used at any time of the lesson
Numbered Heads Together	• Students number themselves • Teacher poses a question • Students in groups put their heads together and discuss • Teacher calls a number and students allocated the number write their responses on a small whiteboard	Mastery of learning and cooperation	An informal cooperative learning structure which can be used to assess learning
Send-a-problem	• Teams review questions • Teams send problems to other teams • Teams respond	Mastery of learning and cooperation	A formal cooperative learning structure which can be used during the lesson development

The principles underlying the Structural Approach are positive inter-dependence, individual accountability, simultaneous interaction and equal participation (Kagan

& Kagan, 1999). The first two principles are already explained in the first section. Simultaneous interaction refers to a situation when there is more than one active student participant at any one time. Such interaction is preferred to sequential interaction whereby students take turns, one at a time to be active in a sequence. This is because in a simultaneous interaction, it increases the number of active students at any one time and the amount of participation time per student. In equal participation, every student has the same opportunity to do the same thing or they each get his/her turn to do something. Nobody is passive and uninvolved.

b) ***Learning Together Model***

The Learning Together model, developed by David Johnson and Roger Johnson (1988), comprises three types of cooperative learning groups, namely, the base groups, the informal groups and the formal groups, and is underpinned by the five elements of cooperative learning. These are positive interdependence, individual accountability, face-to-face interaction, social skills and group processing which are already elaborated in the first section.

Cooperative base groups are long-term heterogeneous groups with stable membership. The members meet daily and provide each other support, encouragement and assistance to make academic progress. They have close communications with one another and forge caring relationships, and over time, a sense of consistency, familiarity and inclusion is built. Students learn to value their differences and work through conflicts and develop compassion, affection and appreciation for others in the cooperative base groups. Some examples of cooperative base group activities include students reminding each other to do their homework at the end of the school day or students sharing one happy event that happened to them during the week (Baloche, 1998; Johnson, Johnson & Holubec, 1992).

Informal cooperative learning groups refer to short-term heterogeneous groups with random membership that last from a few minutes to one period (Johnson et al, 1992). They can be used during relatively long teaching periods such as lectures and video viewing. They can be used to break the lesson monotony, create a conducive learning mood, focus students' attention on the instructional materials by providing an anticipatory set and an opportunity for students to share acquired knowledge, give oral rehearsal and elaboration and receive peer explanations, give teachers an idea of how well their students understand the lessons taught and identify the misconceptions and gaps in student knowledge, and provide a change of pace and closure to the lesson. Examples of informal cooperative learning tasks include two or three-minute "turn to your partner" discussions or "pairs check" (Baloche, 1998; Johnson et al, 1992).

Formal cooperative learning groups refer to carefully designed heterogeneous groups in which members work together on a specific task that takes one period to several weeks to complete. The purpose is for students to learn the specific content through working together (Johnson et al, 1992). Students maximize learning for all by sharing individual and group responsibility for their learning goals. There is active student involvement in the intellectual work of organising, explaining, summarising and integrating materials into the existing conceptual structures. They learn and use interpersonal and small group skills to get the job done and build and maintain effective peer relationships. They may also reflect on their learning and

peer interactions. Examples of tasks for formal cooperative learning include report writing or conducting a survey. The teacher's role when using formal groups include organizing the formal cooperative learning groups, teaching relevant concepts, generalizations and social skills, implementing cooperative learning tasks, monitoring academic and social learning and facilitating group processing (Baloche, 1998; Johnson et al, 1992).

In addition, Johnson and Johnson (1999a) advocate cooperative learning to be integrated into repetitive and routine lessons and classroom procedures which include checking of work, test preparation or review and reading of textbooks and reference materials. They also suggest that schools should be transformed from individualistic or competitive environments to cooperative environments where teachers and administrators work together to ensure that teaching and learning take place effectively.

c) ***The Jigsaw Model***

The Jigsaw model was first developed by Aronson, Blaney, Stephin, Sikes and Snapp (1978). In this model, the class is divided into a few home groups made up of four to five members. Each member is tasked to learn a piece/section of the academic material with members from other groups who have the same piece/section and they all become the experts of the assigned materials. The "experts" will return to their home groups and take turns to share their learning. The others in the home groups will pay attention and ask questions. The members' role is to learn well from the experts because after the whole group has shared, they have to take an individual test. The members are interdependent in the sense that they help each other complete the group task but they are not interdependent when it comes to reward as there is no team score.

Another Jigsaw variation is the Within-group Jigsaw developed by Spencer Kagan (1994). Instead of having expert groups and home groups, each student in a group is given a piece of the academic material to master individually without moving to any expert groups. Students take turns to share their learning with their group members. This is followed by individual assessment. This approach helps to save time because there is no movement between expert groups and home groups. But the flip side is that students have to master the materials on their own without consultation with their fellow experts before they share their learning with their group members. This implies that students have the full responsibility of getting their learning right which can be pressurizing for some. In addition to this variation, Kagan has also outlined several other variations within the generic steps of Jigsaw. For more information, refer to Kagan's (1994) book, "Cooperative Learning".

The Jigsaw model is best used in the primary social studies lessons when teachers want their students to master the academic materials on their own. The Jigsaw is used during the lesson development and teachers need to ensure that the sections of academic content provided are compatible with one another in terms of the length and difficulty level for students so that everyone can finish their work around the same time.

d) ***Group Investigation***

Group investigation or GI was developed by Shlomo Sharan and Yael Sharan (1976). Its main features are investigation, interaction, interpretation and intrinsic motivation (Sharan & Sharan,

1999). Investigation is the learning orientation adopted by teachers and their students. It involves the creation of inquiring communities where students are engaged in the investigation of a multi-faceted, challenging problem usually posed by the teacher. Students have many interaction opportunities with their group members during the discussions of their inquiry plans, examination of data sources and exchanges of ideas and information and discussions on the summary, integration and presentation of the findings to the class. Interpretation refers to students' attempt at sense making of the collected data. It involves the process of negotiation between students' existing and new knowledge acquired, and between student's own ideas and other members' ideas. Lastly, GI promotes intrinsic motivation because students have control over what they want to investigate and how they want to investigate, interpret and present their findings. Their learning is self-directed and they are further motivated to take part in the process when they interact with their groupmates. The GI procedures are as follows:

Stage 1: Class Determines the Sub-topics and Organises into Research Groups

Teacher begins by presenting a multi-faceted and challenging issue or problem to the class. This problem is related to the curriculum or students' lives or it can be a timely issue that is reported in the newspaper. The investigation aims to increase students' understanding of the world around them. The teacher can provide a lecture or stimuli such as books, magazines, newspapers or videos to acquaint students with the problem and demonstrate the availability of materials for investigation. Students will then generate questions individually or in groups and all the questions will be written on the whiteboard by the teacher. Next, students will help teacher to categorise the questions into sub-topics and sign up for those which interest them.

Stage 2: Groups PlanTheir Investigations

In their groups, students will pick the questions they would like to inquire into, determine the resources that they will need, the methods of investigation and the division of work. The teacher helps the groups to plan realistically, maintain cooperative norms and locate appropriate resources.

Stage 3: Groups Carry Out Their Investigations

During the investigation, students will collect the data or information from a variety of sources. Individual group members will organise and record their data and report their findings to their groups. The groups will then discuss and analyse their findings to determine whether they need more information. They will interpret and integrate their findings. The teacher helps students to develop study skills, explore sources, find new connections between the sources and maintain cooperative norms.

Stage 4: Groups Plan Their Presentations

During the planning for the presentation, students bear in mind the following: emphasis of the main ideas and conclusions of the inquiry, active participation of every group member, observation of presentation time, active audience involvement, planning for question and answer session and getting materials ready. The teacher assists by coordinating the groups' plans and ensuring every group member's participation.

Stage 5: Groups Make Their Presentations

During the group presentations, the audience can be actively involved by evaluating the presentations in terms of the clarity and relevance of the main findings, meaningful use of knowledge and the new connections between the sub-topics, the participation of every member in the presentation, utilisation of resources and the best aspects of the presentations. The teacher's involvement includes coordinating presentation schedule, establishing rules for making comments, leading in the discussions of students' comments, facilitating the summing up of discussions and pointing out the relationships between the sub-topics.

Stage 6: Teacher and Students Evaluate Their Projects

Teacher can evaluate students' understanding of the investigation topic by posing questions such as asking for the explanation of the causes or impacts of certain phenomenon or event. Students can write an essay or be tasked to create a product that reflects their learning. The learning products for assessment could be in the form of a newspaper article and a reflection of the investigation process. Students can also be asked to self-evaluate their work based on teacher-provided assessment rubrics.

Like the Jigsaw, GI is best used in primary social studies lessons when teachers want students to be self-directed and independent learners. It is used during the lesson development and teachers need to prepare for GI lessons by assessing students' ability to plan and work together, choosing the investigation problem, thinking through the likely questions that would arise in an investigation problem and locating resources to aid students in their investigation process.

e) ***Structured Academic Controversy***

The Structured Academic Controversy or SAC is also developed by David Johnson and Roger Johnson (1999b). They argue that conflict is inevitable in any cooperative effort because of the goal interdependence built into the cooperative learning task. Contrary to the common perception that conflicts impede relationship development and work progress, the Johnson brothers believe that conflicts if properly managed can bring about benefits in student learning. These benefits include achievement and retention, positive interpersonal relationships and psychological health and social competence. Research studies done by the Johnson brothers (Johnson & Johnson, 1989, 1999a) have shown that students who engage in academic controversy attain greater content mastery and ability to generalize principles learnt from a wider variety of situations. Controversy can bring about more thoughtful decision-making and solutions to complex problems where different perspectives are developed. There is greater creative insight into the issues being discussed because of the exposure to a wider range of ideas and perspectives. There is also greater exchange of expertise and individuals are more involved in the tasks and thus, feel more positive towards them. Members develop greater liking and support for one another and controversy promotes greater self-esteem and perspective taking.

The procedures for SAC are:

Structure the Academic Task

The academic task based on the lesson objectives must be structured cooperatively with two well-documented positions (pros and cons).

Prepare Instructional Materials

The descriptions of group tasks for SAC need to be prepared. The teacher also needs to identify the phases of controversy procedure and interpersonal skills used for each phase, the definition of position, the summary of key supporting points and resource materials for supporting evidence.

Structure the Controversy

SAC begins with assigning students to heterogeneous groups of four, assigning the pro and con positions to the pairs and structuring positive interdependence and individual accountability. Positive interdependence takes the forms of goal interdependence (for example, group consensus on the issue, members' mastery of all the relevant information and participation in presentation), resource interdependence (different materials are distributed to different members) and reward interdependence (bonus points given to the group if everyone masters the basic information for the two positions and scores well). Individual accountability is built by ensuring that individuals participate in preparing and presenting the assigned position, discussing issues, reversing perspectives, preparing and presenting report, and taking an individual test on the materials.

Conduct the Controversy

The steps for conducting SAC are:

i) Assign each pair the tasks to learn their positions and the supporting arguments and information,
ii) Assign each pair to research relevant information and prepare a presentation with persuasive arguments,
iii) Assign pairs to present their positions to one another,
iv) Have students conduct open discussions by exchanging ideas and information freely,
v) Have pairs reverse their positions and present the opposing position sincerely and forcefully,
vi) Have groups to drop their advocacy and reach a decision by consensus, write a group report that includes joint positions, evidence and rationale, take a test on both positions and do group processing.

Teach Students Conflict Management Skills

Without the appropriate conflict management skills, the benefits of SAC cannot be reaped. Hence, the skills to be taught include: focusing on obtaining the best decision possible and not on winning, being critical of others' ideas and not the persons, listening to all the ideas from both sides before integrating them together, taking the opposing position for the purpose of understanding both sides of the issues, changing one's perspective if evidence indicates the need for change, paraphrasing unclear points and focusing on seeking the best possible answers.

SAC is best used when the topic is contentious and there is scope for students to take opposing positions. It can be used during lesson development. Teacher resource preparation is a crucial component of the lesson design and students need to be taught the necessary interpersonal skills to handle conflicts effectively.

Application of Cooperative Learning Models in the Primary Social Studies Classroom

In this section, some examples (see Strategy Examples 1 and 2) of how the cooperative learning models can be

incorporated into primary social studies lessons are shown below.

Strategy Example 1: Using Think-Pair-Share and Send-a-Problem for Primary 4 Social Studies

Topic: Farquhar's Challenges and Solutions

Level: Primary 4

Time Frame: 2 periods

Concepts: Challenges, problem solving

Generalization: Challenges can be overcome through problem solving.

Unit Question: How did Farquhar overcome some challenges when he was the resident and commandant of Singapore?

Specific Instructional Objectives:

At the end of the lesson, students will be able to:

- describe the challenges faced by Farquhar when he was the resident and commandant of Singapore;
- explain how he overcame the challenges; and
- identify the necessary character traits for successful problem solving.

Cooperative Learning Structures: Think-Pair-Share, Send-A-Problem

Social Skills: Turn taking, asking questions, paraphrasing

Equipment and Resources: A LCD projector, a white screen, a laptop, 8 envelopes with written problems (2 on high crime rate, 2 on pest problems and 2 on piracy), a bell and slides

Learning Environment: Classroom

Suggested Instructional Activities

Tuning-in (10 minutes)

1) Using Think-Pair-Share cooperative learning structure, teacher asks the class, "Think of a recent problem you have faced. What did you do to solve the problem and what happened after that?"
2) Teacher asks students to pair up and share with one another.
3) Teacher calls on some students to share what their partners have shared with them.
4) Teacher poses the unit question and informs the class that they are going to study how Farquhar overcame some of the challenges facing Singapore when he was the resident and commandant of Singapore.
5) Teacher asks students to imagine that they were Farquhar who was faced with the challenges of high crime rate, pests and piracy. How would they overcome these challenges?

Development (40 minutes)

1) Using the Send-A-Problem* cooperative learning structure, teacher divides the class of 30** students into groups of 5 students. This means a total of 6 groups. She numbers the groups 1 to 6 and assigns groups 1 to 3 as under Group A and groups 4 to 6 as under Group B.
2) Teacher distributes an envelope with a written problem (challenge) to each group. (Note that for groups 1 to 3 under A, each will get a different problem. The same applies for groups 4 to 6 under Group B.)
3) Teacher instructs all the groups to brainstorm and write down all the possible solutions for their problems on a piece of paper for 3 minutes. They will put the paper inside the envelope once the bell rings.
4) On the teacher's cue, the "postman" from each group will send the envelope to the next group in a clockwise direction (Note that 3 envelopes will be circulated within Group A and the other 3 envelopes

within Group B).
5) Upon receiving the envelope, each group is not allowed to peep into the envelope and read the solutions from the previous groups. Instead, they are to carry on with their brainstorming and write their own solutions on paper before putting it into the envelope.
6) Step 4 is repeated.
7) Steps 1 to 5 are repeated until the envelopes are returned to the original groups.
8) The groups will now take out all the papers from inside the envelopes, look through them and choose the five best solutions for their problems for class presentation.
9) Groups present their solutions.
10) Teacher highlights key points of Farquhar's solutions to the challenges facing Singapore.
11) Teacher asks students to examine their answers in the light of what Farquhar did.
12) Teacher asks students about the positive traits that Farquhar exhibited in problem solving and reinforced them (eg: perseverance and commitment)
13) Teacher asks students to do a quick group processing on their teamwork by showing a thumbs-up, a thumbs-down or so-so.

Conclusion (10 minutes)

1) Teacher asks students to write a letter of appreciation to Farquhar for his contributions to Singapore.

Note: * This version of Send-A-Problem used is modified from Kagan's (1994) version in Figure 1.
** Depending on the class size, teacher will need to adjust the group size, the number of groups and the number of problems for the lesson.

Strategy Example 2: Using Jigsaw and Numbered-Heads-Together for Primary 6 Social Studies

Topic: Main Economic Activities in Southeast Asia

Level: Primary 6

Time Frame: 2 periods

Concepts: Human activities, factors, responsibility, crisis

Gneralisations:

- Human activities can be affected by physical and human factors.
- People need to act responsibly in the event of a crisis.

Unit Questions:

- How do physical and human factors affect rice cultivation in Southeast Asia?
- How should people behave in the event of a food crisis?

Specific Instructional Objectives:

At the end of the lesson, students will be able to:

- explain the factors influencing rice cultivation in Southeast Asia;
- describe the rice growing cycle; and
- act responsibly in the event of a food crisis.

Cooperative Learning Structures: Jigsaw, Numbered-Heads-Together

Social Skills: Turn taking, asking questions

Equipment and Resources: A LCD projector, a white screen, a laptop, picture cards showing the different

stages of rice production with detailed descriptions, small whiteboards for group work, markers, slides

Learning Environment: Classroom

Suggested Instructional Activities

Tuning-in (5 minutes)

1) Teacher shows a series of pictures of different rice products (eg: Malay kueh, Chinese rice dumpling and chee cheong fun, Indian putu mayam, Vietnamese popiah skin and "pho" (pronounced as "fur") - a kind of rice noodle*, and asks the class what they have in common.
2) Teacher confirms that rice is the common element in all the food shown and provides the lesson objectives and unit questions.
3) Teacher informs the class that rice cultivation is an important economic activity in Southeast Asia and shows a map of rice cultivation in the region.

Development (50 minutes)

1) Teacher shows the class some pictures of rice growing landscapes and asks the class to describe the type of environment for cultivation. (For example, students can say that rice is cultivated on the lowlands whereby the land is generally flat, or on terraces which are steps cut on the slopes of highlands to provide flat land conditions. Students can also say that much water is needed for rice cultivation because of the flooded fields in the pictures).
2) Teacher links the factors influencing rice cultivation, namely, relief, drainage (rivers), climate and soil that students have studied in the previous unit on "The Physical Environment of Southeast Asia" to this lesson on rice cultivation. Teacher brings in human factors such as labour, machinery and farming practices which influence rice cultivation.
3) Using the Within-group Jigsaw model to teach the cycle of rice cultivation, teacher provides the following instructions:
   - Each group of 6 will be given a stack of cards showing the stages of rice cultivation. Each person will take a card, study the caption and read the notes on a particular stage of rice cultivation for about 5 minutes.
   - Each member will take turns to share with his group about his stage of rice production.
   - The group will then arrange the pictures in the correct sequence.
4) Teacher asks some groups to share the cycle of rice cultivation with the class.
5) Using Numbered-Heads-Together, teacher gives a class quiz to check on student understanding:
   - Students number themselves.
   - Teacher poses a question.
   - Students put their heads together.
   - Teacher calls a number and students with the number will write their responses on a small whiteboard provided for each group.
6) Teacher shows the class some newspaper headlines of rice crisis and elaborates on the causes and impacts on people's lives.
7) Teacher highlights the actions everyone can take in the event of a rice crisis such as no hoarding through panic buying from the supermarkets, no wasteful consumption, etc.

Conclusion (5 minutes)

1) Teacher sums up the main points of the lesson.
2) Teacher asks students to do group processing by going through a checklist and identify a social skill that they need to improve.

Note: *Alternatively, teacher can bring some rice products and asks the class to observe and sample them.

Conclusion

There is more to cooperative learning group work than just placing students into groups. Successful cooperative learning group work which brings about academic

and social learning and promotion of civic and citizenship values requires teachers to be cognizant of the critical cooperative learning elements of positive interdependence, individual accountability, face-to-face promotive interaction, social skills and group processing. Teachers also need to be cognizant of the various cooperative learning models and the conditions and contexts for their use so that they can make appropriate choices to maximize their student learning.

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