

Strengthening Learner-Centered Approach (LCA) in Myanmar Primary School Teacher Training: Can Initial Practices of LCA Be Seen?

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This study investigated if initial practices of a learner-centered approach (LCA) could be seen at primary school teacher training institutes (Education Colleges) in the Union of Myanmar where Japan International Cooperation Agency (JICA) has been conducting "Strengthening Child-Centered Approach (SCCA) Project" Suggest "workshops for its primary school education instructors and students. It also aimed to see differences in instructional practices between instructors of Education Colleges' Methodology Departments with LCA workshop experience and those of Academic Departments without the experience. The investigation was done with a qualitative analysis of classroom observation video data. The analysis was conducted in terms of three main aspects: social communication pattern seen in the lesson context, content of instructor's utterance, and type of students' utterance. Regardless of the workshop experience, it was found that instructional practices of the instructors from both departments just addressed students' behaviorally active involvement, not the cognitively active participation that is the key fundamental requirement of LCA.

Keywords: learner-centered approach, primary school, teacher training, country A, Japanese aid organization

INTRODUCTION

In respect to enhancing the completion rate and enabling teachers to cope with the rapid changes of teaching-learning practices in Myanmar primary schooling, Japan International Cooperation Agency (JICA) has been providing technical support under the "Strengthening Child-Centered Approach (SCCA) Project". The project Phase I was from 2004 to 2007 and Phase II is from 2008 to 2011. To establish a Child-Centered Approach (CCA) into practice in Myanmar's primary school education, it is required to equip teachers with proper knowledge, understanding and skills of CCA. Here the scope of teachers includes both primary school teachers and Education College (EC) instructors. There are twenty Education Colleges (ECs) in Myanmar that provide pre-service training at the primary school level. At these ECs, CCA workshops were provided for both primary school teachers and EC instructors. After the workshops, EC instructors are supposed to teach EC students by the Learner-Centered Approach (LCA). LCA practice in their lesson implementation and revising EC textbooks in the subjects of Educational Psychology, Educational Theory and Teaching Methodology are essential parts of the project's efforts. Regarding training of the EC instructors, an LCA workshop was conducted in Phase I for those from the departments of these three subjects. However, EC instructors from EC Academic Departments have not yet been provided LCA workshop. In the first year of Phase II a baseline survey will be conducted, with follow-up surveys in the second through fourth years, to check the degree to which knowledge and skills of EC instructors and EC students have increased through adoption of the revised EC textbooks. These surveys have three objects: (1) checking the state of adherence to the revised EC textbooks; (2) checking the basic course skills of EC educators in connection with LCA; and (3) checking the basic knowledge and skills of EC students.

This study pertains to the second objective mentioned above. It investigated if initial practices of LCA could be seen among EC instructor educators, especially among those from Methodology Departments. It also intended to see any difference in instructional practices between instructors of Methodology Departments and those of Academic Departments in respect to the progress of the former's LCA knowledge and skills. Even though the investigation gathered limited data for an initial qualitative analysis, the findings are expected to tell something helpful for the project's forward movement.

BACKGROUND THE ORETICAL ROOTS AND PRINCIPLE OF LCA

From where has the learner-centered approach in educational practice been born? What are the background underlining concepts and principles of LCA? How different is LCA from traditional teacher-centered instruction?

The terms "CCA" and "LCA" have the same sense. The terms are actually derived from the term of "student-centered approach" instruction. Generally, the term "CCA" is applied in the case of young pupils (children) and the term "LCA" in the case of adult learners.

Student-centered approach instruction has been born from the new learning theory of "constructivism". Learning theories changed dramatically in the 1980s and 1990s with new "constructivist" conceptions of knowledge acquisition different from behaviorist and cognitivist theories? The term refers to the idea that learners construct knowledge for themselves – each learner individually (and socially) constructs meaning – as he or she learns. Constructing meaning is learning; there is no other kind. The dramatic consequences of this view are twofold: "1) we have to focus on the learner in thinking about learning (not on the subject/lesson to be taught); and 2) There is no knowledge independent of the meaning attributed to experience (constructed) by the learner, or community of learners" (Hein, 1996). In other words, learning involves constructing one's own knowledge from one's own experiences (Collins, 2006). According to Salomon (1998), constructivism has two origins. While it may have initially been strongly influenced by Piaget's cognitive developmental approach emphasizing the individual and the way the learner constructs knowledge, there were also roots in the socio-cultural approach of Vygotsky. The latter is concerned mainly with the social process of interaction and participation to construct shared knowledge. In the 1990s, learning in the social-cultural context started to be more emphasized. The philosophical basis of constructivism is found in the writing of John Dewey (Savery & Duffy, 1995).

One of the key guiding principles of constructivist thinking is that learning is an *active* process in which the learner uses sensory input and *constructs* meaning out of it (Hein, 1996); In other words, constructing new knowledge is done by doing (Collins, 2006). The crucial action of constructing meaning is mental; it happens in the mind. Physical actions and hands-on experience may be necessary for learning, especially for children, but it is not sufficient; we need to provide activities that engage the mind as well as the hands (Hein, 1996). In short, a key principle of constructivist pedagogy practice is that learners should be *cognitively* active rather than *behaviorally* active during learning (Mayer, 2004).

To implement a student-centered learning environment, attention must be given to the following aspects of learning: the goal of student activity, the role of the teacher, student's motivational orientation, assessment and student interaction (Bransford *et al.*, 1998). A successful student-centered learning environment will be open, dynamic, trusting, respectful, and promoting the natural desire and curiosity to learn. Students will collaborate on meaningful, authentic problems which serve to further their understandings of the subject matter and themselves. This experiential learning involves the whole person such as their feelings, thinking, goals, social skills, and intuition (Bransford *et al.*, 1998).

Regarding the instructor's role in the student-centered pedagogic approach, she has to adapt to the role of a facilitator and not a teacher (Collins, 2006; Quintana *et al.*, 2006). How different are the roles of a teacher and a facilitator? According to Rhodes and Bellamy (1999), a teacher *tells*, a facilitator *asks*; a

teacher *lectures* from the front, a facilitator *supports* from the back; a teacher *give answers* according to a set curriculum, a facilitator *provides* guidelines and *creates* the environment for the learner to arrive at his or her own conclusions; a teacher mostly gives a *monologue*, a facilitator is in continuous *dialogue* with the learners.

Concerning social communication during the lesson context, dynamic social interaction between the teacher and students and among peers play essential roles in implementing student-centered practice. Without dynamic *discussion chains* between the teacher and students and among peers it can not be said that constructivist practice is applied. In other words, classroom lesson communication should be in the form of *dialogue*. Dialogue carries the meaning of linkage between previous and current utterance parts as well as a bridge between current and ongoing utterance parts. In short, social interaction in learning context must be created with discussion chains. "When considering social interaction, the Piagetian school emphasizes cognitive conflict resulting from interaction among peers. Cognitive conflict generates disequilibrium." (Granott, 1993, p.185) The state of disequilibrium addresses intellectual stimulation to learn. Assigning challenging activities to students and letting them work collaboratively makes them cognitively conflicted or puzzled and consequently arouses them to socially interact. As a consequence of teacher-student interaction, as well as student-student interaction, cognitive conflicts arise among students on the way to reaching conclusion. Through such a process, cognitively active learning occurs; that is, students construct meaning for new knowledge by themselves. Unlike *bottom-up* activities generally found in a traditional teacher-centered approach, *top-down* lesson activities are helpful in creating a student-centered learning environment (Slavin, 2000). Examples of top-down activities include those starting with a problem scenario or an ill-structured problem for logical argument.

Furthermore, another essential requirement of the teacher in constructivist practice is mind-provoking questioning. This questioning has two important considerations: (1) questioning of students by the teacher herself, and (2) having students learn how to raise deep thinking questions and apply them in practice. With the teacher in the role of guide, just lower-order cognitive questions such as *who, what, when, where*, do not encourage students' own cognitively active construction of new knowledge. For such encouragement to students, it is necessary for teachers to use questions provoking higher-order thinking (HOT), which refers to the interpretation, analysis, and manipulation of information, to answer a question that cannot be solved through the routine application of previously learned knowledge (Newmann, 1987; 1992). Calling not just upon what students know but also upon how they know it and how they validate their knowing is important in constructivist questioning; that is, epistemic-level questions such as "How do you know?", "Do we need to know more? Why?", and "What makes you say that?" (Top & Sage, 2002). Appropriate waiting time for students' responses is also an important consideration in questioning action.

On the other hand, teacher-centered learning has the teacher at its centre in an active role and students in a passive, receptive role. It should be noted that any one of the following pedagogic approaches does not address student-centered, just teacher-directed instruction: (a) students respond to directions and step by step instruction from the teacher as they progress through activities; (b) students just answer the teacher's step by step simple questions; (c) students just response to a simple activity assigned under the directional control of the teacher; and (d) students just answer the teacher's incomplete statement with a memorized answer. Here simple questions refer to ones pertaining to low cognitive functions like knowledge, understanding and simple application described in Bloom's Taxonomy (Bloom, 1956). A learning environment with any type of instructional approach mentioned does not enable the creation of students' dynamic social interaction during the lesson process. One may argue with that point. Yes. There is no need to deny that social communication exists even in such a learning environment. But it is just the "one-fixed direction" communication pattern occurring only between the teacher and a student where basically the teacher asks and the student answers that cannot be described as "interacting" in a constructivist sense. In a full understanding of constructivism, social interaction in lesson context refers to a dynamic communication pattern with two or more directions.

RESEARCH METHOD

Classroom observation video data collected at the beginning of the project Phase II (December 2008 - February 2009) were qualitatively analyzed. Specifically, data of four cases, classes of two instructors each from Methodology Departments and Academic Departments, were randomly selected from the available data for analysis. Video data were firstly transcribed in English and then data coding was done with the application of text analysis software "MAXQDA 2007".

The basic analysis framework was constructed with the adaption of Sato's (2007) approach to comparative analysis of classroom observation data. The analysis was conducted in terms of three main aspects: (1) social communication pattern, (2) content of instructor's utterance, and (3) type of students' utterance seen in the lesson context. Specific aspects considered under each main aspect were as follows:

(1) *Communication Pattern:*

- One-fixed direction (instructor to students)
(For example, question & answer, response to a simple task or activity, answer for the instructor's incomplete statement)
- Talk together (students-students)
- Discussion chain (instructor-students-instructor-students, or students-students)

(2) *Content of Instructor's Utterance:*

- Direct explanation
- Confirmation, summary of students' responses
- Question
(Simple, cognitive conflict, HOT, or epistemic-level)
- Incomplete statement
- Task or activity assignment
(Simple or challenging)

(3) *Type of Students' Utterance:*

- Non-dialogue
(Whole class, group, or individual)
- Dialogue

Regarding social communication pattern, "one-fixed direction" pattern referred to a communication format that occurred only between the instructor and a student in a fixed direction, for example, instructor asks, student answers. That pattern included the instructor questioning and students answering, students responding to a simple activity assigned, and students' answers to the instructor's incomplete statement. "Talk together" pattern referred to just talking among students and occurred when assigning them to collect simple facts or points. For such kind of simple activity, students are required just to talk in a group while attempting to accomplish it. In other words, students' discussion with HOT and reasoning is not provoked. That is why such type of communication pattern was classified as "talk together" in this study. The third communication pattern "discussion chain" referred to discussion linkage between the instructor and students as well as student to student discussion linkage. That kind of communication pattern is social interaction in the sense of constructivism.

The meanings of question types and types of activities classified under the content of the instructor's utterance are the same as in the literature review. Concerning the type of students' utterance, "dialogue" revealed discussion with HOT, reasoning, and critical thinking. "Non-dialogue (whole class)" referred to student voice by chorus, a single simple simultaneous utterance produced by the class. Here "simple" carried the meaning of students' repeating what they already knew or pertains to low cognitive level functions. Students' talking together in group, which is *not* discussion dialogue, was considered under "non-dialogue (group)". "Non-dialogue (individual)" referred to either an individual student, as a group representative, sharing what the group talked about regarding a group task or an individual student answering the instructor's simple question.

After data analysis, interpretation of the findings was done taking into consideration the respective lesson themes and content. By the way of interpretation a question was asked: “In the situation in which LCA application was appropriate according to the nature of the teaching content did the instructor apply it or not?”

With this process of analysis and interpretation, it was assumed that whether or not initial LCA practices could be seen among instructors, especially among those from Academic Departments, could be determined even though features of data differed in terms of the instructor, teaching subject and content, students and data amount recorded.

FINDINGS & INTERPERTATION

Case I and III pertain to Academic Departments and Case II and IV to Methodology Departments. To enable a better understanding of the findings and interpretation which follow, the background information of each lesson, the respective lesson subject, lesson theme, teaching materials and seating configuration, is firstly mentioned.

Case I: Subject: Biology (Academic subject)

Lesson Theme: Studying about the parts of a plant and those that perform the special duty of storing food

Teaching Materials: Some plants (e.g., ginger and onion plants), some eatable parts of some plants (e.g., radish, carrot, potato, and sweet potato), a knife, picture sheets of radish, ginger and onion plants (These were distributed to each student group.)

Seating configuration: Groups (roughly 8 students/group)

Case II: Subject: Teaching methods of geography (Methodology subject)

Lesson Theme: Curriculum composition of lower secondary school geography

Teaching Materials: A piece of blank paper, a piece of big blank paper, grade V to VIII geography textbooks (These were distributed to each student group.)

Seating configuration: Groups (10-12 students/group)

Case III: Subject: Mathematics (Academic subject)

Lesson Theme: “Logarithmic function” and introduction to “hyperbolic function & inverse function”

Teaching Materials: Students’ own EC mathematics textbook

Seating configuration: No grouping

Case VI: Subject: Teaching methods (Methodology subject)

Lesson Theme: Lower secondary school curriculum

Teaching Materials: Students’ own EC Mathematics textbook

Seating configuration: Groups (roughly 8 students/group)

Concerning these four cases, social communication patterns, content of instructor’s utterance, types of students’ utterance and their respective frequencies seen in the lesson context are shown in Tables 1, 2 and 3.

Social Communication Pattern

Regarding communication pattern, the result was that students’ interaction with the instructor and with their peers could not be seen in any one of these four lesson contexts (see Table 1). Except Case III, instructors of the rest of three cases developed the lesson with a combination of “one-fixed direction” communication approach and “students talk together” approach. But among these three instructors, the

Case I instructor communicated with her students most frequently in the “one-fixed direction” approach in her lesson (over 2 times per minute on average). Also in Case III, the instructor took the “one-fixed direction” communication way in her instruction with high frequency (4 times per minute on average).

Table 1. *Social Communication Patterns with the Respective Frequencies Seen in the Lesson Context*

Case	Department	Recorded Data Duration	One-Fixed Direction	Student Talk Together	Discussion Chain
I	Academic	45 mins 28 sec	102	9	0
II	Methodology	22 mins 03 sec	17	2	0
III	Academic	33 mins 18 sec	137	0	0
IV	Methodology	13 mins 06 sec	14	2	0

Content of Instructor’s Utterance

It was noticed that the content of the instructor’s utterance in all four cases was the same in regard to “incomplete statement” (see Table 2). All instructors made utterances in the lesson context for “direct explanation”, “asking simple questions to students”, and “assigning simple activities to students”. The asking of open-ended “cognitive conflict” questions, “HOT” questions or “epistemic-level” questions was not seen in any instructor’s utterance content. Nor were “challenging tasks”, those which stimulate students’ higher level cognitive thinking, reasoning and cognitively active discussion, assigned. If the utterance content is viewed in terms of proportion, it was found that asking simple questions took the most weight. In addition, instructors’ guiding utterances, like confirming and summarizing students’ different ways of thinking and reasoning, which are required for students’ knowledge construction were not included.

Table 2. *Content of Instructor’s Utterance and the Respective Frequencies of Each Content Type Seen in the Lesson Context*

Case	Department	Data Recorded Duration	Direct Explanation	Confirmation/ Summary of Student(s)’ Responses	Question				Incomplete Statement	Task/Activity Assignment	
					Simple	Cognitive Conflict	HOT	Epistemic Level		Simple	Challenging
I	Academic	45 mins 28 sec	20	0	84	0	0	0	11	6	0
II	Methodology	22 mins 03 sec	5	0	11	0	0	0	0	2	0
III	Academic	33 mins 18 sec	18	0	71	0	0	0	63	12	0
IV	Methodology	13 mins 06 sec	1	0	11	0	0	0	0	2	0

Type of Students’ Utterance

From the results shown in Table 3, the single simultaneous response utterance of the whole class to the instructor in the lesson context could most frequently be heard in all four classrooms. This means that class utterance with the form of “non-dialogue” most frequently came out in the lesson period. In addition, although students’ utterances produced within their group and individual students’ response utterances to the instructor could also be noticed, such kinds of utterances were just in the form of “non-dialogue”. No “dialogue” utterance was evidenced in any lesson.

Table 3. *Types of Students' Utterance with the Respective Frequencies Seen in the Lesson Context*

Case	Department	Data Recorded Duration	Non-Dialogue			Dialogue
			Whole Class (Single simultaneous utterance)	Group	Individual	
I	Academic	45 mins 28 sec	66	9	34	0
II	Methodology	22 mins 03 sec	11	2	7	0
III	Academic	33 mins 18 sec	137	0	5	0
IV	Methodology	13 mins 06 sec	13	2	0	0

Overall Findings & Interpretations

To create a LCA learning environment, *stimulation* for cognitively and socially active students is basically required. That is, the instructor needs to stimulate cognitive conflict so as to require higher-order thinking and support students' cognitive work and social interactions.. However, from the above findings of the types of instructors' questions, their respective frequencies and the role the instructors took, it can be said that an LCA learning environment was not developed in any one of the three cases in which the application of the LCA in the whole lesson or some parts of the lesson was appropriate according to the lesson theme (see Table 4). These instructors took the leading role, not supporting or guiding role, controlling direction to reach the conclusions they set by directly explaining, asking simple questions, assigning simple tasks or activities and letting students complete their simple incomplete statements. (See examples in Episode 1 & 2 that are parts of the transcripts.) Students therefore needed to respond to the instructor's step by step directions and they had no chance to have a discussion. Accordingly, it was impossible for students to construct meaning for learning themselves and through shared knowledge. That is why, also from the stand point of student interaction, it can be said that initial LCA practices were not seen in any of these three instructors' lessons regardless their workshop experience.

The above three cases reveal that the instructors' commitments to LCA were not seen even though there were possible and appropriate situations to use it in their instruction. On the other hand, in Case IV, an opposite finding was interestingly seen. The instructor unnecessarily assigned activities to students as group work for the purpose of just simply recalling what they had done and learned previously. (See Episode 3 that is a part of the transcript.) It could be implied from the findings that her understanding of LCA practices might be incomplete even though she had LCA workshop experience. She might think that having to form students into groups and giving any task to students without considering the level of challenge for them was one of the LCA approach practices.

Table 4. Exemplary “Cognitive Conflict” Tasks for Three Cases

Case I (Possible example of LCA application for the whole lesson)	Please imagine that you are biological experts working at an agricultural office. If a layman mentions the following statement, do you agree with it? Give reasons for your agreement or disagreement. “All the plants have all parts. The composition of the parts is the same in all plants and trees. And the eatable parts are also the same in any eatable plant.” For your group discussion, two different plants, a worksheet with a Venn Diagram (a thinking tool) and a piece of blank paper are provided on each group table. First, you need to write down the identity of each plant’s parts and the reason for your identification.. Next, using the diagram sheet, please discuss similarities and differences of these two plants in terms of the composed parts, their composition and eatable parts. Based on these two steps, please draw a conclusion for the statement given. Finally, your group needs to present your way of thinking to the class and discuss with the class a final conclusion. (Note: The set of plants distributed may be different from group to group.)
Case II (Possible example of LCA application for a part of the lesson)	(The class has already learned the basic knowledge of the forms of curriculum composition - “straight form” and “snail form”.) As a group, please identify the forms of curriculum composition, either “straight form” or “snail form”, for each of the following four chapters in grades V to VIII geography textbooks. Then discuss if the other composition form is used for each study part, how are the curriculum objectives affected? <i>"Basic fundamentals of nature", "Own country", "South East Asian countries and neighboring countries", and "Practical geography".</i>
Case III (Possible example of LCA application for a part of the lesson)	You have already learned about “exponential function” in last week’s lessons. Today you have learned about “logarithmic function”. In terms of what aspects are these two functions different and how do they differ? Discuss in your group.

Episode 1

T (*Instructor*): (Real authentic) plants have distributed on your group table. Firstly, let’s study about a plant of radish (white East Asian radish). Please identify which part is its root, stem or leaf. If your group has finished, please raise your hand.
(A few minutes after) Have you already discussed? Group 5, give answers, please.
S (*Student*): (Student representative from group 5) Showing their group’s real plant of radish, she points each particular part and mentions the names of the parts.
T: Are there any answers different from group 5?
S: (One student from group 3) The big white part is egg (i.e., She just mentions the name used by a layman.)
T: Please look at a plant. What is the lowest part?
T & C (*Class*): Root
T: What is the part connected with root?
T & S: Stem
T: What comes out from the stem?
C: Branches, leaves, fruits and flowers.
T: Which part and which part does the stem connect?
C: Root and branches.
T: What is the under part connecting stem?
C: Root
T: What is the upper part [of stem]?
C: Branch
T: (Holding a plant of radish) If so, let’s look at radish. What part is root?
C: Thin hair
T: Where is stem? What is the part connected with root?
C: Stem
T: Where is the stem?
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Episode 1 (Contd.)

T & C: Main root (tap root).
T: (While pointing out the particular place of her drawing on the blackboard.) Here is the place where leaves start to come out. [Generally,] from which part do leaves come out?
C: Stem.
T: (She draws a plant on the blackboard. She explains while drawing.) When you look at a plant, there is root below. And it has branch. In some plants, leaves come out from stem. You have already taught the place on the stem, from which leaves come out at high school level. What is the name of that place?
C: Node.
T: (Holding a plant of radish) If so, from which place do leaves come out?
C: Node.
T: If so, where is stem of radish?
C: Big white part.
T: (Pointing the correct place) What is the place here from which leaves are coming out?
C: Stem.
T: Stem.
T: What is it under stem?
C: Root.
T: (Pointing out the big white part of the plant of radish) The part linked with stem is main root (tap root).
T: What comes out from main root?
C: Roots
T: Side roots (small roots). Small pieces of hair are?
C: Side roots.
T: Side roots. What is this big white part?
C: Main root (Tap root).

C: Big white part.
 T: (Holding leaf) What is it?
 C: Leaf.
 T: (She draws a plant of a radish on the blackboard. She explains sometimes while drawing; sometimes pointing out her drawing.) As I said, root is linked with stem. The part coming out from stem is ...

T: Main root. What is the part here connected with that main root?
 C: Stem.
 T: What does come out from the stem?
 C: Leaves.

Episode 2

T: The study areas in each grade curriculum are four. They are T & C: (The whole class looked at what the instructor wrote on the blackboard and simultaneously shouted.) "*Basic fundamentals of nature*", "*Own country*", "*South East Asian countries and neighboring countries*", and "*Practical geography*".
 T: We are going to study about "in which relation the curriculum is composed from grade V through grade VIII regarding these four main study areas ". (To have each student group view grade V to grade VIII geography textbooks in respect of finding the relation). Grade V to VIII textbooks and a big blank sheet are distributed to each group. To have each group study about one of these four study areas and write down what you have studied on the sheet. I will give 10 minutes. (She assigns a particular area to each particular group.) Then, to have one member of each group come to the front of the class and *explain* to the class what your group has *studied*.
 S: (The representative of Group 3 fixes the paper sheet her group prepared on the blackboard and explains what her group has viewed.)
 S: (The representative of Group 2 does the same as above.)
 S: (The representative of Group 4 does the same as above.)
 S: (The representative of Group 1 does the same as above.)
 T: I will *add* to what all of four students mentioned. (Looking at the contents mentioned on group 1 & 2 paper sheets, she just *explains*.) (She does not point out even some mistakes in these four students' presentation.)

Episode 3

T: In your micro teaching practice, did you teach all subjects of both upper- and lower-grade levels of primary schools? How many subjects did you teach?
 C: Six subjects.
 T: Write down the subjects you taught in group. Then, one male student and one female student come to the front and start to mention primary school lower-grade level subjects and upper-grade level subjects respectively on the blackboard. I will provide you 2 minutes and within 2 minutes any other male students can add to obtain a complete list of lower-grade level subjects and any other female students to the list of upper-grade level subjects. Finally, male students are to add what female students have mentioned if necessary and vice versa. (Students are writing names of subjects that they taught.) (One male and one female student come to the blackboard and write the names of the respective subjects on it.)
 T: Female students, find mistakes of male students
 C (F): General science is to be changed to natural science
 T: Male students, do you agree with female students' correction?
 C (M): Yes.
 T: Male students, do you have any correction regarding what female students have mentioned?
 C (M): Geography and history should be combined as "general and social".
 T: Female students, do you agree with male students' correction?
 C (F): Yes
 T: When you did micro teaching practice, some of you taught "moral and social", I think. Did you all teach life skills?
 C: Yes.
 T: What are subjects called?
 C: Curriculum

CONCLUSION & DISCUSSION

According to the findings of this initial investigation by means of qualitative analysis, it must be said that the application of an LCA among EC instructors is currently at a beginning stage. It is clear that the instructors involved in this analysis tried to put forth efforts to make their lessons active with students' participation. But here, importantly, it was found that regardless of the workshop experience all of the instructors' attempts just addressed students' *behaviorally* active involvement, not their *cognitively* active participation. It is cognitively active participation that is a key fundamental requirement for LCA.

Reflecting on the findings of the analysis and observations from the lesson review done during the transcription process, several points became clear. Both of the two instructors with LCA workshop experience and one instructor without LCA workshop training did not seem to have a correct understanding of the roles of student grouping and assigning group activities to students from the standpoint of creating a cognitively active learning environment. Their incorrect understanding might be "for LCA, student grouping is compulsory", or "*Just assigning* a group activity makes students active in their learning". Their understanding should be: Any activity assigned to students in either form of individual or group must involve *cognitive conflict* that enables *stimulation* of their higher-order thinking, reasoning, critical thinking, prediction with logical reasoning, or arguing with facts and evidence. Such kinds of cognitive conflict are starting points.. Here the instructor must *work together* with students in dealing with the conflict by raising thinking questions, further digging into students' thoughts with

prompting and probing questions, providing hints, arousing students to make inferences or interpret their responses, having students think from different perspectives when necessary, arousing students to raise discussion questions and curious-minded questions back to the instructor and their peers. Of course, the instructor's direct explanation may also be required in some parts for the lesson to flow, but it should not be a major portion. During the period that students are dealing with the activity assigned, the role of the instructor should not disappear. She must work as a facilitator. As a consequence of the instructor performing as a facilitator, students actively react in a natural way and that brings about students' interaction with the instructor and peers.

In addition, instructors' actions need to be changed if proper LCA commitments are considered. These three instructors were quiet while students were performing the assigned activity in group. Time to time they instructed students with the word "*discuss*" but here it did not carry the real sense of "*discuss*" in constructivism for example they could say "How many parts are there in a plant? You have already learned about that in your high school study. Please don't answer. *Discuss* in group first. And raise your hand if your group gets an answer." Instruction just with having students imagine real materials was found although the pictures or real materials were necessary in the instructional situation.

Overall, it must be said that the instructor's role is important for successful LCA implementation, creating students' intellectual motivation in the lesson context. It is like a volleyball game. Without a ball the game does not work. The ball is therefore the basic necessity. But even though we have a ball, nothing happens in playing unless a player on one of the two teams begins a *rally* by attempting to serve the ball. Thus, also in developing a LCA learning context, the instructor is required to create the ball itself (cognitive conflict) and then start the rally (perform a facilitator's tasks).

The findings of the study suggest the following for successful LCA practices in ECs and primary schools in Myanmar. The first suggestion is "to have a proper background notion of LCA among instructors." This notion should be, "LCA is not necessary to be implemented at all the time of teaching and learning". That is, if the lesson purpose is for just giving basic knowledge of the content to students, no need to apply LCA. Excepting such a lesson purpose, LCA can be applied incrementally to some parts of one-period lessons or to some parts of lesson unit. The second suggestion is, "To have instructors' proper and complete understanding of "*why*" and "*when*" student *grouping* is necessary in LCA and that it is not compulsory to do it in every LCA attempt." They need to decide to do it depending on the nature and purpose of the lesson content. Third is to have more opportunities to learn and to share practical practices regarding how to create stimulation with cognitive conflict and how to take a facilitator's role.

As the study was an initial research study with limited data, the findings indicate the possible *tendency* regarding initial LCA practices among EC instructors, especially among instructors with LCA workshop training. Therefore, in order to confirm the findings and obtain a general picture it is necessary to conduct further research investigations on the progress of instructors' LCA knowledge and skills with data of more cases and longitudinal data of each instructor's case. However, the findings of this study and the suggestions born from the findings are expected to be helpful in the project's future proceedings as well as in further research work.

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