Cross-Curricular Activities in Primary Schools and the practice in Cambodia

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Introduction

Environmental education (EE) was just integrated into the national curriculum broader in the beginning of the 1990s in primary schools with initial support coming from international donors and organizations but there was no mandatory requirement for schools to teach EE. However, the Ministry of Education published some environmental education manuals through the cooperation with other NGOs and ministries to train and to guide teachers on environmental education. in line with the guidance of MoEYS to motivate the teachers in Cross Curricular Themes (CCT) in Child Friendly programmes, some primary schools in Cambodia have been implemented such activities but not explicitly.

The Guidelines were intended to assist teachers and schools to plan and provide education “in, about, and for the environment” in a way that integrates with learning objectives of the real practice in the nature. As such, schools were encouraged to develop environmental education programmes through a process of subject-based curriculum development and Cross-Curricular Activities (CCA).

This paper reports on the experiences in the implementation of CCA related with the environment in 15 primary schools in Kampong Cham (KC) and Siem Reap province (SR), and the linkage of CCA and Learner’s Centered Methodology. It presents the practical experience to investigate the practice of cross-curricular activities in Cambodian schools. The purpose of the paper is to provide information on current practice, and trains to inform current and future EE programmes, and to provide direction for future initiatives.

Background

For several years the benefits of cross-curricular activities in a school context have been recognized by most educational researchers. Teachers who use cross-curricular themes create active students by engaging them in authentic tasks that emerge naturally from interesting and worthwhile topics and ideas. Cross-curricular themes integrate the language skills (reading, writing, speaking, listening, observing, and thinking) across a variety of content areas, such as science, social studies, math, etc. To achieve a lasting effect with environmental education, teacher training colleges and pilot schools in Cambodia realized that it is imperative to involve the younger generation in cross-curricular activities, which are integrated in the curriculum of primary schools. The teachers developed an increased awareness of the natural environment that surrounds them and of the positive impact they can have on it. The students were encouraged to share their new skills and knowledge with their friends and family.

The training in LCM was designed by international VVOB experts in cooperation with MoEYS and carried out in two Provincial Teacher Training Colleges, with a group of 130 teachers from 30 schools. They completed the course successfully at the end of 2005. The training consisted of 5 modules: (1) Learners Centered Methodology; (2) Learning to Learn; (3) Material development; (4) Improving Math Teaching and Learning; (5) Assessment and Evaluation. After completing the
course, the teachers were ready to implement LCM in their classroom, through the organization of CCA.

EE mini-project activities were first implemented in Siem Reap and Kampong Cham province in 2006. Two years later the activities were expanded to Provincial Teacher Training College of Siem Reap (PTTC SR) for in depth application and extended collaboration between PTTC and pilot schools on CCA in the environmental education. From the beginning already some 8 schools with more than 40 teachers and directors, and 500 students started EE mini-projects. Cooperation with a school typically lasts two to three years, after which the schools may still be involved as demonstration centers for new target schools in the project.

The process of setting up the CCA in each school was similar. There was evidence of cross-curricular planning for EE including practical activities, which involve teacher collaboration and best practice sharing of inter-school presentation which was organized by VVOB at provincial teacher training colleges (Siem Reap and Kampong Cham). Every school designed an exhaustive planning that covered between three to six months depending on the different projects with a detailed time frame, including tasks that encourage students to investigate and to develop problem solving strategies, to explore the topic more in depth. At the beginning of the school year director or vice-director organized a meeting with his/her teachers to prepare CCA planning in which the school development plan and CCA were integrated. In the selection of the topics, schools were encouraged to not only select activities and topics that were interesting to the students, but also to focus on the possibility to set up meaningful and sustainable activities. The school teams selected the mini-projects based on their needs, characteristics of the school and students, and their interests. Some schools decided on setting up activities including more than one topic.

Experiences showed that, when setting up CCA for the first time, interest and involvement of the students needs to be monitored, and very often the time line needed to be modified. The senior teacher and school managers take the lead in environmental initiatives and promote awareness among teachers. Each school that chose EE mini-project had an EE coordinator with full support of management, time and resources. To help them easily coordinate the project in their school, teachers and directors were invited to participate in mini-project orientation workshops at PTTC to give environmental education strategies within cross-curricular perspectives and to discuss and present the content and aims of CCA. Some examples of CCA were presented, but the participants were free to add more relevant topics. Examples of the projects were: tree planting, tree awareness, compost making, clean water, waste collection and management, vegetable gardening and environmental events, such as school yard clean-up or campaigns.

Good practices in school

The potential of the school garden, vegetable garden and Eco-garden were developed for EE, helping to balance 'in school' and 'out of school' learning opportunities in Siem Reap and Kampong Cham. All pilot schools of VVOB project and most primary schools in Cambodia implement Child Friendly School (CFS) programs to stimulate effective teaching and learning through cross-curricular themes to set up classroom activities or school activities as several advantages. CCA enables students who take part in EE mini-projects to acquire, communicate, and investigate environment knowledge in depth. Four subject areas (Khmer language, math, science, and social studies), were studied within the context of environmental themes in our pilot schools, doing so students came to view school subjects as connected and interrelated, rather than isolated and divided because the students could learn from the real life such as planting trees, growing vegetables and flowers in their school. Furthermore, CCA allowed students to make choices, interact, collaborate, and cooperate with their peers. The students in Toul Thmor Kampong Cham, for instance, conducted action research on what they had done with the vegetable garden: they interviewed their family, community, farmers, and social workers to collect the information on how to grow morning glory,
cabbages and others vegetables. Students explored topics individually, in small heterogeneous groups, and together as a whole class. The tasks were authentic, interesting, relevant, and contextualized. They can make choices based on their interests, abilities, and needs. Furthermore they practiced research with different kinds of materials for varied purposes which helped Cambodian students who rarely focus on surrounding nature. In Cambodia context-CCA was developed in terms of participative and experiential techniques with a wide range of teaching and learning styles.

Teaching and learning approaches promote environmentally responsible attitudes, values and behavior. Students were able to use prior knowledge of the nature and past experiences to create relationships among various sources of information. Problem-based learning and experiential-based learning were useful learning strategies of CCA that allowed the students to build a base which prepared them for future "real life" otherwise also facilitated the development of social skills, working together, analyzing information, being critical, etc. For example, applied science in primary schools introduces twelve steps of teaching pedagogy: observation, description, comparison, classification, measurement, information, prediction, recommendation, synthesis, experiment, modification, and conclusion. Through this guidance, teachers in Muk Neak and Sret Schools applied and helped their students to make a connection between their previous and current knowledge, and what they were learning in mini-environment projects. The variety of teaching strategies and activities were used during CCA implementation and teaching including game, presentation, group work, pair work, direct observation, and other strategies in Learner Centered Methodology (LCM).

The students could apply what they had learned in a meaningful "real world" context. The development of problem-solving and decision-making skills, allowed them to connect school learning and their home. Additionally, when students viewed their learning as significant and leading to an interesting result, they put more effort in their schoolwork and achievements. Similarly, stimulating learning within the ‘real world’ context, where cross-subject collaborations and learning underpin many cultural activities was important. Group work discussions in classroom have been not so interactive in the current phase of LCM implementation in Cambodia context because of unpractical ways of organization or just over-use of group work. To improve this situation CCA approach in LCM motivated and inspired the students and provided key links to their learning outside the classroom too. The teachers involved in this project, confirmed the high engagement of the students in fun and interesting learning. The students liked to be confident to communicate with the environment for example the student in the practice school changed their attitude from polluting to caring or preventing for a good environment, which they considered meaningful. The project allowed the students to contribute something and participate actively. Moreover, they reinforced and/or revised knowledge about the real world which they studied in other lessons.

Cross-curricular activities were not just used in a specific subject but it was enhanced in multi-subjects of LCM way for critical thinking and creativity. Key concepts that link together subjects (e.g. creativity) can be helpfully explored for common meanings and associated practices. Before starting CCA most teachers said, the textbooks were too old and not enough to teach so teachers experienced that CCA was extra contents and knowledge for their students when the students understood their role and responsibilities through CCA which was facilitated by EE teachers. Authentic processes of learning (e.g. performing, discussing, playing, gaming, etc) within a subject maintained and developed in collaboration with other subject’s learning processes. Students were actually allowed to perform science experiments and real practice in the garden as they constructed meaning and acquired understanding. Composting and eco-garden activities, allowed students to develop thinking processes and encouraged them to question and seek answers that enhance their knowledge and thereby acquired an understanding of the physical universe in which they live. And students sometimes were presented with problem-solving activities that incorporate authentic, real-life questions and issues in a format that encourages collaborative effort, dialogue with informed expert sources, and generalization to broader ideas and application.
Lesson plans and contents to be taught need to be selected and identified by individual teachers based on surrounding environments and school condition. In the LCM way, specific skills, such as comparing, testing observing, and contrasting, can be taught through structured and carefully planned mini-lessons or through more interactive lessons for those students requiring more structured guidance, and action research. As I mentioned above all pilot schools teachers and teachers in Chong Khneas as well were trained five modules of LCM so the main objectives of the training was to improve the quality of teaching and learning through promoting active teaching strategies into the lesson plans. Mini-lesson plans (CCA) and EE lesson plans were encouraged to be upgraded by the teachers in Chong Khneas which is very close to the Tonle Sap Lake choosing hygiene contents and water experiment, the use of bio-sand water filter, and community campaigns to implement clean water projects and waste management. Each lesson plan integrated EE concepts and were linked to the real life of the floating village community. After two years of CCA implementation in schools, teachers said that “We teach the students more effectively because the students already understand and see the real situation happening in their home so when we teach them the real life with real materials they were quite familiar to understand”

The use of resources was kept to a minimum, with teachers and students taking responsibility for reuse and recycling. Exploring topics in a variety of ways, using different resources, helped them to discover the relationship between what they were learning and their own living environment. During CCA implementation it was important to be clear about the role of the teacher. In some projects his role was to facilitate, in others to provide information and explanations, in others to coordinate and serve as a model. A range of appropriate resources should be made available for the students. Involving parents, relatives, district officials, teachers, or others for assistance with some content areas, such as art, music, life skills, handicrafts can help to relieve the pressure on the teacher to become an expert on every thematic topic. Teaching with posters was reduced and not a priority any more, most materials were collected from the school environments for teaching and learning and not spend much time for the development which was in contrast to as the teachers said, before they spent double the time on the preparation, more time than the time it took them to teach it. Furthermore, recycling-art materials were introduced to the teachers and students during the implementation of CCA in pilot schools that was a part of LCM training module about materials development (module 3). Recycling materials made the students use their creative ideas in a friendly environmental concept and to understand the importance of recycling materials in teaching and learning. Recycling and environmental awareness in EE mini-projects is a way of life. Recycling was a distinctive program where the entire school works together for a common cause. To stress the importance of recycling, CCA was designed to teach students about recycling and help them to produce teaching and learning materials.

In addition, during the project implementation the EE coordinator working with the VVOB project staff gave the opportunities for teacher development in EE with targets to achieve basic knowledge and understanding. School visits were organized enabling teachers to exchange experiences with other teachers in Siem Reap and Kampong Cham to learn and share experience from each other about CCA implementation for EE. During the school visits the presentations, observations, interviews, and discussions about the practical experience of CCA promoted the teachers to adapt and explore new initiatives for their school, especially the connection of CCA and life skills in terms of learning the real life, and community involvement. In 2007 the study tours were organized for school managers and teachers to Vietnam and Thailand to visit EE projects and other CCA activities carried out by students and teachers in the region.

Cross-curricular work was not just about curriculum content and knowledge. It was about pedagogy too. Working with colleagues should cause to reflect on pedagogy and teaching strategies. It challenged the teachers to consider new approaches. As I mentioned above, CCA and EE was a new view for the teacher, not only the students learned about the environment but the teacher also
learned about how to teach EE lesson plan and what had to do CCA practically so the collaboration of EE teacher was very important for CCA in Cambodia situation that why I choose this article for my paper. The VVOB-LCM project provided LCM training to improve the quality of teaching to reach effective student’s achievement. In terms of LCM way we would like to see student’s learning more and more active so as we have seen cross-curricular works stimulated students works more effectively.

Clearly, teachers cannot teach what they do not know. It was essential for teachers to have a sound understanding of CCA for the subject content they touch. The mini-project of CCA helped in-service teacher training to apply basic EE in Learner Centered Methodology. So teachers practiced CCA in their teaching and the students applied real life learning in the process of CCA, and school managers reviewed and integrated EE in school development plan.

The student teachers were quite interested in taking part in mini-projects at the pilot school where they went for their teaching practice. They learnt from the observation and involvement in the project. Through the interview with the student teachers and pilot school teachers, CCA proved not only important for the pilot schools but it also improved the quality of pre-service teacher training during the teaching practice because the student teachers could get new experience and practice for their teaching in both ‘indoor and outdoor’.

CCA showed the teachers a lifelong impact on their students by incorporating EE strategies into teaching. By helping them to know what their rights were as citizens, empowering them to take action and feel they could make a difference, clarifying the fact that connections between individual or family and the environment were linked, and getting them excited about the natural world, the teachers could spark a personal ownership in environmental concerns.

All CCA carried out in the pilot schools with the students of the upper grade in primary school; generally tasks were organized in small groups varying from 5 to 8 students or more than that. Some teachers also included individual tasks to the project. Whether an activity is more effective with whole-class interactive, small-group, or individual work depends on the nature of the projects and, of course, the skills and interests of the students and teachers. Mostly, EE mini-project practiced by the students in grade 4, 5, and 6 but it did not mean that the project could not work with the students in grade 1.

The most difficulties in taking care of the Cambodian environment is the negative human attitude and behavior. Through CCA of environmental education there were opportunities for students to demonstrate commitment to the environment. Student’s attitude was changed gradually so school yard and garden started to be clean without the plastic bags and solid waste any more. Tree planting and awareness was a good example for CCA that helped students in Rolos and Hunsen Komrou School to learn the prevention of deforestation and land encroachment which have been sensitive environmental issue in Cambodia. Even though the mini-projects did not implement with all students in school, this effective activities and not just help the volunteer students but it encouraged other students in school through the student’ council which is a mechanism of child-friendly schools in Cambodia to promote the student’s responsibilities.

The school promoted itself as an environmentally responsible community, for example through campaigns and school event such as dancing performances, parents meetings, and environmental days in Rolos and Preah Dak School. Partnerships were arranged with local authorities, local environmental groups and community to support curriculum initiatives. Linking between school and home were developed, in order to raise awareness and ensure the cooperation and involvement of the family in the process of CCA. Parents haven’t payed much attention to their children’s learning because “I can’t read and write and mostly I spend time on my job and small business; no time for teaching or helping them” so we have seen that parental involvement within
school was low but CCA implementation was taking into account for parents and community improvement as we learned from EE-mini projects.

Finally, CCA permitted students to perform informal assessment strategies to evaluate their understanding and learning styles. Together with the teacher they shared the responsibility for periodic progress checks and ongoing evaluation of the mini-project. The teacher assessed throughout the project, both formally and informally. Formal assessment included specific tests of reading, writing, and the use of language. Informal assessment opportunities occurred during the process, such as notice for short comments, brief conference summaries, observations of discussion groups, journals, reflections from mini lessons. Opportunities for evaluating participation in CCT projects, following the development of social skills, and noting improvement in oral language took place on a daily basis.

Conclusion

The results of integrating CCA in the school curriculum were mainly positive. Depending on the project, the students and the teachers, a short term or long term result can be observed; Participants agree that the implementation of CCA in the school curriculum provided authentic, ongoing, multidimensional learning opportunities for the students. The teachers agree that offering the school curriculum in a more engaging, meaningful, relevant way, motivated the students to learn and support the development of children's independent research skills. Besides, CCA strengthened the links with the parents and the community.

In considering the role of CCA and EE in basic education, it seems important to first explore some recommendations for both concepts. In many countries CCA and EE were focused on developing academic skills or capacities (cognitive development) through a core curriculum that includes language, science, math, and social studies. In addition, we also see that CCA and EE include personal, moral and social development.

Also at school level positive results could be observed; the yearly educational statistics provided by Provincial Office of Education in Kampong Cham and Siem Reap showed a decrease of the amount of absent students and an increase of approval rates in the 15 pilot schools (MOEYS, 2007). Although no direct link can be shown, between the CCA and these figures, the conclusions might motivate teachers in applying CCA. Often teachers worry that CCA will slow down the learning process of the students, since they do not follow the steps described in the regular text books. The statistics, however, show that the extra effort of the teachers, and the time spent on these CCA and not directly on regular 'textbook related' activities, have an indirect but positive impact on students achievement and school motivation. The actual society requires an integration of what we have learned in an interdisciplinary way, teaching children through cross-curricular disciplines prepares them better for applying new knowledge & skills.
http://www.tesol-spain.org/newsletter/andrewes.html


Change in behavior in regards to the environment through environmental education to primary school children,  

HOLT, RINEHART AND WINSTON, Cross curricular activity,  
http://go.hrw.com/resources/go_mk/la/laeo1-7/crosscur.pdf


Ministry of Education, Youth and Sport (Dec 2005) Child Friendly School program


Providing Hands-On, Minds-On, and Authentic Learning Experiences in Science,  
http://www.ncrel.org/sdrs/areas/issues/content/ntareas/science/sc500.htm