

***The Development of Learning Communities for Conservation and Sustainable Transferring of Knowledge to Children and Youth in Chachoengsao Province, Thailand***

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**Abstract**

This research was aimed to study the needs of children to learn a body of conservation knowledge that existed in the local community, in order to develop the resources of the local community and provide the conservation knowledge transfer to children, which would promote the children's learning with the conservation knowledge that was available in the local community. The research was conducted through the consideration of the conservation potential resources to develop the learning community and participatory sustainability in order to transfer the knowledge to children. The process was carried out through lecturing, focus group, workshops and demonstrations to achieve the learning process and preparation of learning media in the forms of paper, posters and video media in Chachoengsao Province.

It was found that the local community in Samet Tai sub-district had selected the integrated agricultural learning resources by adopting the King's Sufficiency Economy Principle for organic waste management by using household waste. The knowledge and development were transferred to students at Ban Nong-Sano School through workshops concerning the use of biological compost and herbal insect repellents. The local community in Nong Naer sub-district had selected the learning resources at bamboo community forest (Pa Pai Park), which was the bamboo forest found only in Eastern Thailand. The knowledge concerning conservation awareness of bamboo forest was transferred to students at Wat Nong Naer School.

Keywords: Knowledge transfer, conservation utilization, organic waste management, and bamboo community forest

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## **Introduction**

The strategic plan for the development of Thailand National Economic and Social Development Plan No. 11 (2012 - 2016) had been featured in the strategic development and social reintegration of Thai wisdom and learning-oriented management knowledge, wisdom and modern knowledge from the community level to the national level by focusing on the management of natural resources and the environment sufficient to maintain the ecological balance and a solid base of national development. Such strategies from reflecting the learning community develop management of natural resources and environmental sustainability from the district level was the key to strengthening the community, through development and transfer of knowledge in the management and conservation of natural resources and the environment in the context of each local community. It has been documented that the learning process of the community has many ways including the group of community members get together to exchange ideas and to learn each other (Nakorntub, 1997). Results of learning from practice of the community and learning to work together as a network with a similar concept will make public to learn the importance of community, understanding of the situation of the communities, and ready to participate in the management and conservation of natural resources and environment of the communities by themselves. This practice with an initiative event of a great unit parties to relate network jointly develop a learning community that involves by focusing on the cognitive development to children. The development of the learning process of children and young people is aimed to bring the knowledge from academic institutions to transfer to children and bringing knowledge of wisdom of the community to the education institute for the development of learning process. This will give an opportunity for the children to learn both the theory coupled with the lifestyle of the local community, so that the operation should focused on the development of learning communities to be ready by the greenway lessons learned knowledge, and then pass on into the process of transferring knowledge through group workshops for children to learn more concretely. The learning process model including several practices, i.e., media relation campaign, establishing data centers in the community, demonstrations, training, studying, seminars, sharing of knowledge, brainstorming and organizing stage for an exhibition to disseminate information, and broadcasting online media. The authorities in all sectors should be involved in the operation to jointly inherit the knowledge of the management, conservation of natural resources, maintaining the environment to remain as a community-based capital context and the potential contribution for the development of knowledge and the development of learning process for children (Walaisatiean, 2000).

Therefore, one of the interesting areas is the development of learning communities, and transferring of the knowledge that relate to the management and conservation of natural resources and environment for children in Chachoengsao Province by gathering existing data that are currently available to develop the learning process for children. The collection of knowledge that relates to the conservation and sustainable forest management will be developed for children to participate in the project. In-depth interviews and site visiting should lead to the implementation of the education institute that creates critical thinking for conservation and sustainable life skills development of children (Munkept, 2008).

This study was aimed for transferring the knowledge of the conservation and sustainable environments to children, where the development of the project required a

survey the need of children and young people regarding factors for the learning of cognitive conservation with local communities, and resources in the local community, while the local community should provide space for the knowledge conservation in Chachoengsao Province. Results of the study are expected to lead to the preparation of the information media and technical documents to be used in knowledge management and conservation of natural resources and environment for children and youth.

## **Research Methodology**

### **Participants**

The population in this research was a group of children in elementary schools located in Samet Tai sub-district and Nong Naer sub-district, Phanom Sarakham district, Chachoengsao Province, Thailand. Thirty participants were selected from students in the fourth to sixth grade of the primary school, who interested in the learning process of cognitive conservation.

A qualitative method was used to collect information from participants, where the processes that used to collect information were divided into four stages. The first stage was a collection of information concerning a potential of social capital of the community from all documents that were currently available. An in-depth interview was also carried out in order to obtain for information concerning community resources for use in the transfer of knowledge and encourage the learning activities of children in the area of research. An analysis of the requirement of children groups was done in order to learn knowledge, conservation of existing resources in the local community based on the availability of knowledge that needs to pass on the conservation. The development of learning media and learning process for children to be used in the parish, where the knowledge of local communities were carried on various techniques, i.e., group participatory workshops, lectures, demonstration of knowledge, and developed learning materials, i.e., videos, posters, books, paper, a presentation format that children used in the education institutes, for sharing and distribute to other children. Finally, the fourth phase was done by publishing and used as learning materials to promote learning processes. This was a transferring of knowledge from research to children, where a network of learning knowledge and conservation of the children would be created.

### **Instrumentation**

The instrument used for data collection consisted of a survey/recorded data of a learning community, and a semi-structure interviewing information to explore the knowledge of specialists in order to bring the knowledge to children in the study area.

### **Data Analysis**

All data were analyzed using content analysis with qualitative data that obtained from surveys, a summary of in-depth interviews, and the observed resources potential of the local community data. An interpretation and content analysis for the requirement of children to the learning knowledge related to social potential and conservation community for the determination of developing community resources.

## Results

Knowledge concerning the conservation and natural management was obtained from the first phase of investigation, i.e., an integrated agricultural, production of mushroom using non-toxic fertilizer and bio-fertilizer production in Samet Tai sub-district and natural management of bamboo forest that was existed at Pa Pai Park, agriculture farmer and the weaved products made from materials of the tree trunk and leaves of coconut palm tree in Nong Naer sub-district. All of the information would be used as learning resources for the knowledge transferring to children. The processes that involved the community forum in local community activities to obtain materials and information for learning process are shown in Figure 1.



Figure 1. Pictures showing some activities during the gathering of community forum in the local community.

Results of an analysis to determine the requirement of children as recipients of knowledge transferring process, where the selected 57 children, which were recruited from students who were studying in grades 4 and 5 of Ban Nong-Sano School, Samet Tai sub-district, showed that 68.42 percent of children would like to learn the conservation process. The well-known project that currently existed in the community was the King's Sufficiency Economy Principle of organic waste management using household waste and agricultural farms to compose and used for the cultivation that resulted in the increment of agricultural products and reduction in the use of chemical insecticides and pesticides in agricultural fields.

The participants in Nong Naer sub-district consisted of 72 children who were studying in grades 5 and 6 at Wat Nong Naer School. The need of children was obtained through focus group discussion with consensus, that resulting in 73.61 percent of children were needed to take part in learning process concerning the conservation of bamboo community forest (Pa Pai Park) as the learning resources.

The bamboo community forest was the special bamboo forest that only found in Eastern Thailand, which occupied 367 rai and more than 200 species of herbs to make a perfect ecosystem. This bamboo community forest has been registered timber by the Forestry Department, Ministry of Natural Resources and Environment. This bamboo community forest was registered as public forest areas, where public were allowed to visit and utilized it as a learning resource. The activities of focus group discussion are summarized in Figure 2.



Figure 2. Pictures showing activities of focus group discussion of children for their needs related to conservation.

Table 1. Results of an analysis for the needs of children concerning the use of conservation knowledge in the local community as learning resources in Samet Tai sub-district, Chachoengsao Province.

Transferred conservation knowledge	Sample group (people)	Percent
Integrated agricultural learning resources	39	68.42
Bio-fertilizer learning resources	12	21.05
Non-toxic mushroom learning resources	6	10.53
Total	57	100

Table 2. Results of an analysis for the needs of children concerning the use of conservation knowledge in the local community as learning resources in Nong Naer sub-district, Chachoengsao Province.

Transferred conservation knowledge	Sample group (people)	Percent
Bamboo community forest (Pa Pai Park) learning resources	53	73.61
Agricultural farmer learning resources	12	16.67
Coconut palms weave learning resources	7	9.72
Total	72	100

In terms of the development of the learning media for learning process of the children, where the learning media were constructed and subsequently used in the knowledge transferring to students using lecturing, focus group discussion, workshops and demonstration.

The integrated agricultural knowledge was created as media for learning and knowledge transferring to children at Ban Nong-Sano School, Samet Tai sub-district, where various kinds of media were produced, i.e., poster, papers, flap sheets, video, that were used in workshop's activities. All media were used as demonstration of experts. Various topics, i.e., biological compost from organic waste, effective microorganisms from pineapple, and herbal insect repellents, were used in the workshop. These workshops affected children's learning process, where they used the knowledge for the application in their household, resulting in increasing of agricultural productivity, improved the quality of soil, enhancing wastewater treatment, and replacing natural herb compensate chemical insecticides, which was known as bioremediation. The activities of integrated agricultural workshop for children are summarized in Figure 3.





Figure 3. Pictures showing activities of children who participating in the integrated agricultural workshop.

The learning media related to the conservation knowledge were distributed to local organizations, school, and farmer in local community. This learning media were known as “Walk along with King’s Sufficiency Economy Principle, Samet Tai sub-district, Chachoengsao Province”, which would apply to promote the conservation knowledge and integrated agricultural in order to create a network of King’s Sufficiency Economy Principle to children both inside and outside of local community.

In Nong Naer Sub-district, all learning media the related to knowledge transferring of the bamboo community forest were created in the form of poster, paper flap and video, where the knowledge transferring was carried out with children at Wat Nong Naer school. The knowledge concerning conservation awareness of bamboo forest was transferred to children by training under specialists, where the workshop in real area such as bamboo forest survey, walk nature trails and herb bamboo forest learning were also performed. The examples of topics used in training were, i.e., the importance of bamboo forest to community, bamboo ecosystem, bamboo conservation, bamboo collection, charcoal product from bamboo. The properties of herbs in the bamboo forest, i.e., *Gooseberry*, *East Indian Screw Tree*, *Pueraria Mirifica* and *Cotton Tree* were also used as topics in the workshop. Children were enjoying in helping to create the boundary of the forest, and planted some tree *Yang*, *Pterocarpus*, and *Siamese Rosewood*. These learning skills were related to the utilization of bamboo. Thus, these workshops affected children’s learning process in the way that they could help the community to produce new created goods, i.e., conscience to appropriately utilize a piece of bamboo. They also become aware of policy and penalty of bamboo forest community, where they were realized and cherish the bamboo forest for a conservation of the bamboo forest in the local community. The activities during the survey of the bamboo forest and walk nature trails of children are summarized in Figure 4.



Figure 4. Pictures showing the activities of children during survey and walking through the bamboo forest and walking trails.

The constructed learning media derived from bamboo forest and the conservation were distributed to local organizations, school, and local community in order to promote the media. These learning media derived from the “Bamboo forest (Pa Pai Park) were inherited from generation to generation in the community, Nong Naer sub-district, Chachoengsao Province. The learning media were maintained in the community to promote the conservation knowledge of bamboo forest community,



resulting in the increment of children awareness, and the consciousness of children, contributed to the sustainable conservation of the bamboo forest.

The example of learning media for knowledge transferring that is currently available are shown in Figure 5 and Figure 6.



Figure 5. Pictures showing learning media for knowledge transferring to children that were currently available in the community in Samet Tai sub-district.



Figure 6. Pictures showing learning media for knowledge transferring to children that were currently available in the community in Nong Naer sub-district.

All of the learning media that were developed in those three phases were promoted and advertised for networking to participate in knowledge transferring to children both living in and outside of the community.

### Conclusion and Discussion

It is expected that the conservation knowledge will be transferred to children through the learning process with active participation of children in the community.

In the research area, Samet Tai sub-district that integrated agricultural knowledge transferred to children in Ban Nong-Sano School. The learning resource has been adopting the King's Sufficiency Economy Principle for organic waste management using household waste. Children are experienced several knowledge's concerning biological compost of organic waste to improve soil and wastewater treatment, effective microorganisms derived from pineapple that affect to an increasing in agriculture productivity, while herbal insect repellents to replace chemical insecticides. The farmers will obtain more incomes after the application of this knowledge. The outcome of this study will create collaboration among local community conservation knowledge of learning resource and networking to another community. The learning media, "Walk along with King's Sufficiency Economy Principle" at Samet Tai sub-district, Chachoengsao Province will be an efficiency media and beneficial to public relations, which will be serving as learning center of sufficiency economy for local community in the future.

In the research area, Nong Naer sub-district, the knowledge concerning the conservation of the bamboo forest will be transferred to children in Wat Nong Naer School, where the bamboo forest is only found in Eastern Thailand. It has been shown that the diversities of herbs are contributed to lifestyle of people in community for quite some time. The community leaders and people in the community have established bamboo forest community, which is known as Pa Pai Park for the appropriate utilization of bamboo. The activities regarding to conservation and restoration of the bamboo forest, i.e., set up the boundary of forest, planting tree and herb in the forest, labeling the species of herb, and allow local people to use bamboo between May to September. Children can participate in surveying; walking nature trails, cultivation of bamboo, labeling the properties of herb. The outcome of this study will promote the conservation knowledge of learning resources. The children become awareness and are conscious for bamboo forest conservation to make it sustainable for the local community. The director of school is agreeing to develop the school to become the learning center of sufficiency economy for local community in the future.

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