

The Role of a Buddhist Monk in Local Development: Science Communication from a Local Thai Context

Nuta Supakata

Department of Environmental Science, Faculty of Science, Chulalongkorn University, Thailand.

*Corresponding Author. E-mail address: nuta.s@chula.ac.th

Received 30 November 2010; accepted 4 August 2011

Abstract

This study aims to identify and analyze the role and processes of mediators in bridging two knowledges by using the SECI Model of Ikujiro Nonaka as a tool to investigate knowledge creation directed by a mediator. Because of the difficulty of linking Thai local wisdom and science & technology, in this case Phra Somkid Jaranathummo, a Buddhist monk from Wat (temple) Pongkhum as mediator played a significant role in connecting these two areas of knowledge. To conserve and to systematically develop knowledge of natural dyed cotton woven textile as an alternative in order to nurture village self-reliance, *Phra Somkid Jaranathummo*, initiated a research named “The development processes of natural-dyed fabric production at Wat Pongkhum”, a participatory action research which had financial support from the Thailand Research Fund (TRF).

Keywords: Buddhist monk, mediator, science communication, local development

Introduction

Most of local communities in Thailand still depend a great deal on outsiders. In order to become self-reliant and self-sufficient, some have returned to using their local wisdom/practice as capital for their sustainable development action. Unfortunately, in some communities, local wisdom/practice is inadequate. To add more value, science and technology is required as a supplement. According to Saneh Chamarik*,

‘Modern scientific knowledge and learning therefore has always a great role to play, not to supplant or suppress, but to supplement indigenous knowledge and scholarship. One should, however, be aware that knowledge and theories (or technology for that matter) are not neutral but are part of a greater knowledge construction.’

In addition, most local communities do not have the know-how to acquire and use science and technology. As Seri Phongphit says:

People like to see examples and often want to know more about ‘how to do’ but not ‘how to think’.

Therefore, appropriate strategies are needed to transfer modern science and technology to local communities and integrate this new knowledge into their

daily lives. This is so as to be sure that modern science and technology will not destroy local wisdom and the way of living of local people but will, on the contrary, help strengthen local people to become self-reliant. To interconnect science and technology with local wisdom/practice in the community, ***the mediator will play a significant role.***

Objective

The objective of this study is to study the role of a Buddhist monk as a mediator in linking modern science and technology to local wisdom/practice.

Methodology

To collect the data in this case study, the author used documentary study to gather background information on Pongkhum village, learnt and understood the local life, the role/processes of the mediator through observation and interviewed key informants. In this case, the author used a qualitative research method to study the role and processes of mediator in bridging local and scientific knowledge. To analyze the processes of the mediator, the SECI model of Knowledge Creation conceptualized by Ikujiro Nonaka was applied to understand the processes of the mediator in a Thai context.

* Saneh Chamarik is the Chairperson of the National Human Rights commission of Thailand and is regarded as “one of the three senior citizens”, a title of honor bestowed on him by the general public.

Case Study

Bann Pongkhum, a 108 year old village, is located in the Du Phong sub-district of Santi Suk district in Nan province in the northern part of Thailand. Most of the area is mountainous with well-preserved forests and watershed areas. Most of inhabitants are Lao Phuan or Tai Phuan, a minority ethnic group. Up to the present, Pongkhum Village's inhabitants have gradually increased by 220 households and the total population is 902; 489 (54.21%) are male and 413 (45.79%) are female. About 170 households work in the agricultural sector; growing glutinous rice and milled rice paddy, cultivating rice, corn and peanut plantations. Most rice plantations are a mixture of rice and pumpkins or local melons grown in the same patch. The farmers can harvest many crops from such mix plantations. This production method stems original wisdom that has been passed on in the community from the past to the present. 20 households work as labor and service workers. The other 30 residual households following the harvest season will work in other provinces. Moreover, some often earn extra income from weaving cloth, doing basketry and buying and selling goods. The average income per household is 7,000 to 12,000 Baht a year depending upon their diligence and endurance.

The Wat Pongkhum and Buddhist monks have co-existed along with the village's history. The Wat is the next most significant institution for Pongkhum villagers' life after their family. Buddhist monks stand as a symbol of the villagers' commitment and are the core of village unity. The monks are the villagers' spiritual leaders and a source of respect, trust and co-operation. Before 1972, "Wat Pongkhum" served as the educational center of the community. Elderly villagers recount that boys and young men between the ages of 12 and 20 came to study (*buad rian*[†]) at the temple. They would learn and orally practice *Mukhapatha* including Buddhist doctrine, write, read, calculate and gain knowledge of herbal medicines by using the temple as their classroom and having the Buddhist monks as their teachers. After the educational reform of 1972, children, both girls and boys, had the opportunity of studying at "Baan Pongkhum School", a primary school providing the compulsory education (6 years). However, Wat Pongkhum and the monks are still the center for the Pongkhum villagers up to the present. All of their rites and ritual ceremonies take place at Wat Pongkhum. The villagers also use the temple as a meeting place because the villagers believe

[†] *Buad rian* is a term used to refer to a person who is an ordained monk; *buad* means to be ordained as a monk or novice, while *rian* means to learn. (Seri Phongphit and Kevin Hewison, 1990:21-22)

and pay respect to the temple as their sacred place. They normally announce their rules and agreements in the temple and rest their faith in the Buddha image as an eyewitness. After this, all the villagers must strictly observe the rules. The children, young people and adults come together to pray every evening led by **Phra Athikarn Somkid Jaranathummo**, the abbot of Wat Pongkhum.

The wisdom of natural dyed cotton woven textiles has been a long-held traditional skill of the Pongkhum women handed down from their ancestors to their descendants. The natural-dyed cotton woven textile of Pongkhum is unique in terms of the natural materials from the locality and its dye production. The patterns and designs also reflect the artistic and creative skills of the local culture passing down through many generations. The handloom for natural dye cotton weaving is a part of their traditional way of life for producing their own clothing. Every woman has to produce her own family's garments. The production process begins with growing the cotton, spinning, dyeing, weaving, and manufacturing textiles. Various products are produced such as clothes, blankets, mosquito nets and other fabric items for their households. Pongkhum women have to make their own wedding dresses and their groom's suit, then their children's clothes, the bed set and finally the shrouds for family members' corpses. Moreover, they weave long flags, colloquially known as *tung* for presenting at merit-making ceremonies. This *tung* requires meticulous skill in its elaborate weaving. This weaving tradition is passed on from generation to generation. The following are accounts of weaving history from elders in Pongkhum village:

"When I was a teenager, my mom taught me to weave. Every household had cotton fields. If they didn't have any, they would not have cotton to produce their clothes." Mae Feuy Bungmek

"The man in the past chose his woman by recognizing her cloth. If she wore an old dress, it meant she was lazy. So he would not choose her to be his wife." Mae Fong Bungmek

"Young girls spun the cotton in front of their house every evening. Young men would show their interest in a particular girl by going to see her while she was spinning the cotton. In case of no growing cotton, the girl would have no cotton to spin; consequently, she

might not have a chance to get married” Mae Tib Parbvuth

This knowledge has been transferred from generation to generation for more than one hundred years. Young girls are taught at a young age. They observe older women such as their mothers, aunts or grandmothers, weaving and then remember the techniques. The older women also give them personal instruction.

The heritage of Pongkhum's local wisdom is for people who have an interest in learning. There are no hard and fast rules about communal pursuit of wisdom. If one has a willing heart then she will gain complete knowledge.

“The instructor is not paid but is rewarded by the students’ attention and work.” Aunt Hlor Jun-Aon

The value of Pongkhum's traditional heritage of natural dyed cotton weaving does not depend on any other factor but the *Happiness* of the instructor, who has the chance to play her role and display her ability from which others can learn and practice.

It is regrettable that this traditional textile has been lost in recent times as a consequence of the rapid changes in the social and economic structure of the country. Peaceful and self-reliant ways of living have been replaced by urban life. Villagers buy more materials and resources, included necessities, from outside because they think that these modern items are better and are an expression of civilization. Most of their basic requirements today are imported so people must use cash in exchange for them. Pongkhum community has passed from a subsistence economy to a market economy, from a bartering to a monetary system. At the same time their heritage of natural-dyed cotton weaving by hand has waned in popularity because of the complicated and time consuming nature of the process, and is gradually being replaced by chemical-dyed machine weaving which is easier and quicker. Pongkhum villagers have reduced their production of cotton. Some grow for selling instead of growing cotton to produce their own garments and they use the earnings to buy readymade clothes which are more modern and convenient. In addition, this local knowledge is gradually becoming extinct and obsolete because of Western development processes, swift population growth and the educational system because much of the knowledge has come from the weavers own experience and there are virtually no written records

or instruction. Anything taught is passed down orally. Consequently, knowledge is limited and much has been lost along with village elders.

Fortunately, Pongkhum villagers have *Phra Somkid Jaranathummo*, a thinker and development monk from Wat Pongkhum who was born and raised in Pongkhum village and has devoted himself to conducting numerous correctives and development actions with harmonious collaboration between governmental development policy and village custom in order to help villagers cope with their hardship.

*“The monk is a part of society and the temple is the main institution of the community. When the community has problems, the monk plays an important role on the villagers’ difficulties. If the villagers have no food, they will suffer less than if they did not have any monk or Buddhist novice in the temple because they can ask for some food from the others. If the monk ignores their troubles, it seem he has abandoned them. Due to being a part of society, the monk must do his duty according to each’s conscience.”*Phra Somkid Jaranathummo.

Phra Somkid Jaranathummo plays an essential role in giving Pongkhum villagers’ will power, ideas and intelligence. They have great faith in him and this is one of the important reasons why they come together to solve the problems of their community. Phra Somkid sees that everyone in the village has a duty to participate in problem solving. Though the government sector attempts to take care of problems, most solutions do not meet the target because of cultural differences. Some solutions are not sustainable whereas some are ineffective. Therefore, the most effective way of problem solving is that everybody in the community joins to share ideas to find his own proper solution with outside support. In addition, Phra Somkid says that everyone is comparable in intelligence but different in the skills of perception and instruction. For this reason, he arranges for a forum to be held in Wat Pongkhum, which was once used as a place where masters would present their wisdom. Then he analyzes and systemizes the outcome of the meetings.

As one of the members of Bann Pongkhum, Phra Somkid sympathizes with and deeply comprehends the conditions of the villagers under such circumstances. His understanding has led him to undertake many activities to encourage Pongkhum villagers to be self-reliant. Among these is the activity concerning their

local knowledge in weaving. By gathering housewives and elders who are expert and interested in dyeing and weaving, Phra Somkid established the *Bann Pongkhum Naturally-Dyed Hand-Woven Lao Phuan Textile Group* in 1995 aimed at reviving the art of the natural dyeing and fabric weaving of Bann Pongkhum and generating supplementary income. In Phra Somkid's own words:

"I was born and grew up here. When I was young, I saw our aunts weave fabric for making their clothes. Pongkhum villagers were men of great weaving and dyeing abilities and therefore I had the idea to revive all such knowledge. At the beginning of the project, there were only 3 master participants. I tried to gather all the weaving instruments I could. Though our aunts said that antique dealers had bought almost all the things, some had still been kept. Then I arranged a meeting for discussion about the revival of cotton dyeing and weaving knowledge because it is our pride. At that time, many people worried that they would not be able to sell their products so I told them that I would buy all of them." (The Knowledge Communities, 2004)

At first there were only 10 members. They made the cotton fabric using their own knowledge and skills. However, they could not sell their woven fabrics as well as they expected because of the low quality of dyeing, weaving and design. Therefore, later in the year 2000, the weaving of Pongkhum villagers was revived again. Phra Somkid conducted the project on *"The development processes of natural-dyed textile production: a case study of the natural dyed fabric women's work group in Bann Pongkhum, Nan province"* financed by the Thailand Research Fund (TRF). Its objectives were to 1) study local knowledge of natural-dyed fabric production in Bann Pongkhum, 2) conserve and develop this local knowledge including the production process, marketing, and management 3) create a learning group network for producing natural-dyed fabric throughout Santi Suk district in Nan province. It started with the organization of a group meeting (in local language called khuang-Gum-Gued) in a friendly environment. 60 members both old and young and a research team, who mostly were members of the group, shared what they had learned from their mothers,

grandmothers and great-grandmothers. The research team took notes during their storytelling. At the end, they concluded that there were 2 methods of Pongkhum natural dyeing, which had been passed on from generation to generation: boiling and soaking.

Some local plants were used for dyeing such as the leaves of teak (*Tectona grandis* Lin.f.) providing a red color, the wood of the betel palm or cutch tree (*Acacia catechu* Willd.) giving a brown color, the wood of the jackfruit tree (*Artocarpus heterophyllus* Lam.) giving a dark yellow color. Soda ash was also used as natural mordant[‡] to fix the dye color to the cotton yarn. These materials could easily be found in the village. However, the standard formulae of dyeing have rarely been found in written form since the dyers used their own skills and experiences by estimating the size of the cotton yarn in relation to the volume of dye ingredient.

While practicing these dyeing methods, Phra Somkid and the Pongkhum group found that strong sunlight and washing easily faded the color of the natural-dyes of the cotton textile. This caused their products to be below standard. With his research skill gained from systematic education, Phra Somkid studied the method of using mordant to permanently fix dye to the cotton fiber by searching through the textbooks, dyeing research reports, academics and dyeing experts outside the village. He found that using mordant could solve this problem.

Although mordant is important for firmly attaching the cotton fibers to the dyestuff, it also changes the color. That's why Pongkhum group can create numerous shades of color, though using only a few local plants. In order to introduce this new technology to the group, Phra Somkid set up an experiment with the assumption that the use of appropriate mordant would support dyestuff to efficiently fix the cotton fiber and allow it to have more light and wash fastness. Phra Somkid and the research team designed the experiment by separating all the participants into 5 groups, each group consisting of 6 members. All members in the same group soaked their own cotton yarn in the same mordant. Then they immersed mordant soaked cotton in 6 different types of plant.

From the experiment, all the participants not only understood how to use mordant for assisting cotton fiber to efficiently cling to the dyestuff, they also became aware of various shades of color as well. Aunt Nang, one of four leaders of the weaving group, said

[‡] Mordant is a substance used to set dyes. A mordant is either inherently colloidal or produces colloids and can be either acidic or basic. Mordants include tannic acid, alum, chrome alum, and certain salts of aluminum, chromium, copper, iron, iodine, potassium, and tin. [Available at <http://en.wikipedia.org/wiki/Mordant>]

“Our group tries to find mostly local materials to use so as not to spend too much on outside materials. At present, we buy cotton yarn only. The dye can be found in our community forest. We can create 100 shades of colors from 5-6 original colors following upon our experiment.” (The Knowledge Communities, 2004)

For the weaving part, the expert members revived and developed 2 more new patterns: Kled-Tao and Num-Hlai, from 4 original patterns: normal pattern, Song, Sam and Mook. However, most members could not weave all of the patterns. They basically learned to weave all the original patterns and the additional 2 new patterns afterwards. From this project research, the villagers gathered holistic knowledge of natural-dyed cotton weaving and conducted experiments in color, pattern and design development. These activities made them produce more acceptable products that resulted in more income. The number of members increased from 10 people to 60 people with a revolving capital of 100,000 baht.

All the members are now proud of their own products from sustainable natural-dyed cotton weaving. They are also satisfied with their increasing income. Of late, they can earn approximately 2,400 Baht per month over their regular income.

“I really appreciate natural-dyed fabric weaving activity. Though I am too old, I am able to invest money without getting any support from my children. I am happy and very proud of myself.” Mae Fong Bungmek.

The benefits that Pongkhum participants have gained from their research are more than expected. These benefits include:

1. Sharing and learning between *expert* and *beginners*; the beginners, who are less skilful, have the opportunity to learn natural-dyed creation and various patterns of fabric weaving from the masters to enhance their expertise.

2. Sharing and learning between *old* and *young*; the young people learn local knowledge from the elders and practice it with them. They also share both knowledge and opinions, which gradually help to bridge the generation gap between them. In addition, the elders' feelings of loneliness have been very much reduced and they have achieved much more happiness in their rest of life.

3. Sharing and learning among *local groups of natural-dyed fabric weaving in Santi Suk district*; in this project, the agent of the Pongkhum group has had the chance to visit other village groups with 'best practice' to learn and share their knowledge of fabric production and management. After that Pongkhum group transmits this lesson to other group members in Pongkhum village through the knowledge report.

Nowadays, Baan Pongkhum is acknowledged among community development organizations to be a vigorous village and a model community. It is also an information resource for the students and interested people. This great pride and willpower has encouraged Pongkhum villagers to maintain their value and virtue for years to come. Baan Pongkhum is an example of a small community whose villagers practise their own knowledge and have enhanced their original and local wisdom to become a new knowledge, which can be applied effectively as a practice based on the cultural way and local resources.

Analysis

Phra Somkid Jaranathammo acts as a mediator trying to link new dyeing techniques using mordant to a weaving group which already has its own knowledge and skills in natural dyeing. The Pongkhum group needs the modern science and technology of mordant to solve the defective natural-dyed cotton of the local technique, which is less receptive to dyestuffs. As the mediator, Phra Somkid applied scientific experiment to transfer and integrate this new dyeing technique into the local technique for a better quality of product. Additionally, Phra Somkid also has a research team as his co-mediator.

Knowledge Spiral 1 *Reviving local dyeing technique*
Mediator: Phra Somkid Jaranathammo

Co-mediator Research team

Local Knowledge 0 (LK₀):

Pongkhum dyeing technique embodied in individual
Modern Science and Technology 1 (MST 1):

scientific techniques including observation, analysis and taking note

New Knowledge 1 (NK 1):

- dyeing technique of Pongkhum villagers
- skills in scientific techniques

From the group meeting initiated by Phra Somkid, the members of Bann Pongkhum Naturally-Dyed Hand-Woven Lao Phuan Textile Group shared their ideas,

knowledge, opinions and experience and the co-mediator (the research team) acted as the notetakers (Socialization-Externalization). With the help of the co-mediator in taking notes and motivating, they revived their own knowledge and skills and formalized this knowledge in a written form as a manual (Combination). After the meeting, Phra Somkid let them spend time in practicing this new Pongkhum dyeing technique. Acquired knowledge and skills from practice became new tacit knowledge in individuals (Internalization). Through these processes, the group was also taught about scientific techniques including systematic thinking, observation, analysis and taking notes. At the end of this stage, the group had gained skills in scientific techniques, as well.

While practicing the new Pongkhum dyeing technique, Phra Somkid and his co-mediator closely followed up the group. This follow up stage enabled the mediator to move up to the second spiral of knowledge.

Knowledge Spiral 2

Processes of new dyeing techniques using mordant

Mediator: Phra Somkid Jaranathammo

Co-mediator research team

Local Knowledge 1 (LK₁):

Pongkhum dyeing technique

Modern Science and Technology 2 (MST 2):

use of various mordant to protect the natural dyed cotton against fading

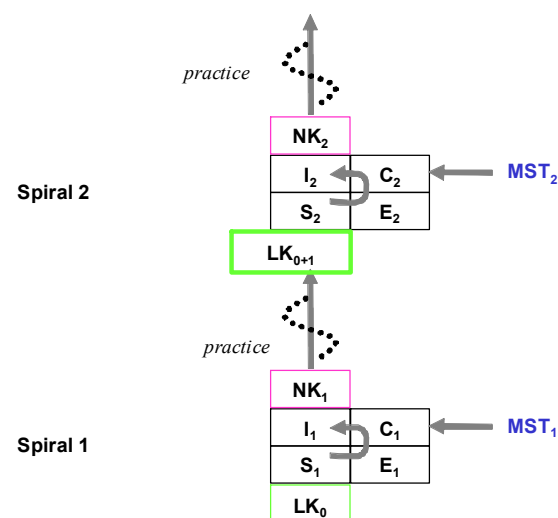
New Knowledge 2 (NK 2): new dyeing technique

Another meeting was organized. This time Phra Somkid used the After Action Review (AAR) technique by asking everyone to express what had happened, why it had happened, what had gone well, what needed improvement and what lessons could be learned from individual experience (Socialization). From what they found and what Phra Somkid and his co-mediator observed, they all accepted that this was a weak point of their products. They mutually came to the conclusion that their dyeing technique was insufficient to produce natural dyed cotton, which had the property of color fastness against fading from wash and light fastness (Externalization).

At this point, therefore, it was easy for Phra Somkid to introduce the new technique in dyeing which he had gained by searching from literature and obtaining dyeing knowledge from academics and experts outside Pongkhum village. As a result, everyone easily accepted

the suggestions. Phra Somkid and the research team integrated the new knowledge with the Pongkhum local knowledge of dyeing, systematized and recorded the knowledge in a manual for use as the criterion for all members of the group. The content in this manual consists of the 6-step method of dyeing and mordant process (Combination). Through the experiment set up by Phra Somkid, the new technology has been transferred and adjusted for use. Every member adopted the new dyeing technique of using various mordant to increase the color fastness of their natural dyed cotton against fading from light and washing. Moreover, all the weavers also practiced 6-step dyeing method in order to produce standard and quality Pongkhum natural dyed cotton. A good integration between the new technology and the old one occurred during the experiment. Meanwhile, this integrated knowledge has become their new knowledge (Internalization).

Figure. 1 The integration process of local knowledge (tacit knowledge) and modern science and technology (explicit knowledge) into new knowledge can be analyzed using SECI model of knowledge creation.



E = Externalization
C = Combination
I = Internalization

Conclusions

In conclusion, to empower local people by raising their local knowledge through the spiral of knowledge creation, Phra Somkid, who is a mediator, performed many roles including:

1. As an initiator, to gather and establish a group which have a common interest and own the same skills and motivate them and show the value of their heritage.

that their dyeing technique was insufficient to produce natural dyed cotton, which had the property of color fastness against fading from wash and light fastness (Externalization).

2. As a facilitator, to encourage the group in telling stories, to motivate the group to think and to share, to provide the information they need, to organize meetings or workshops etc.

3. As a note taker, to capture and summarize into manuals through working with his co-mediator.

4. As a monitor, to follow up and supervise the group.

Personal communication: Phra Somkid Jaranathummo, Pongkhum Temple, Du Phong sub-district, Santi Suk district, Nan province. Tel. 667-065-0219

Personal communication : Mrs.Lhor Jun-onn, Pongkhum village weaving group leader

Key informant

Phra Athikarn Somkid Jaranathummo was born in Pongkhum village on June 1st, 1963. He was part of a needy agricultural family. After finishing elementary school, his parents could not support him through higher education and he had to work hard in rice farming in order to help with the family budget. Then in 1977, he was ordained at Wat Pongkhum temple in his native village where the *wat* was the best school for poor children. With his endeavor in studying, he ultimately passed the exam of the final grade called '*Nakdham Ek*' in Buddhist education and graduated as a Master of Arts (human and environmental management) in secular education.

Acknowledgements

The author truly appreciates the help and assistance of the following people: Phra Somkid Jaranathummo and all the villagers of Pongkhum Village; Dr. Nunthaporn Viravathana and Dr. Pinsuda Viravathana for their valuable advice and suggestions; and last but not least the Supakatas (Mrs. Nipa, Mr. Montri, Mr.Kris and Mrs.Surattanaporn) for all their support.

References

I. Nonaka and Takeuchi. H, *The Knowledge-Creating Company:how Japanese companies create the dynamics of innovation*, New York :Oxford University Press, 1995.

The Knowledge Communities, Bangkok: Thailand Knowledge Center, 2004.