



## Role of community in knowledge transfer and production of new potters at the Maenam Noi kilns in the province of Sing Buri, Thailand

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### Abstract

This study examined the role of the community in the inheritance of knowledge and the creation of new generations of potters at the Maenam Noi kilns in the province of Sing Buri, Thailand, using qualitative methods and field study. The sample included 10 pottery experts active in the community who had at least 20 years of experience in pottery at Maenam Noi. The study was carried out with in depth interviews, non-theory-based event analyses, and analytic induction. It was found that in the inheritance of knowledge and process of creating a new generation of potters working in the Maenam Noi kiln community, the elders and inheritors exhibited readiness to instruct and to receive knowledge, respectively. That is, the possessors of knowledge, or instructors, had accumulated experience that had developed into a personal attribute that could be passed on. The learners, for their part, showed love, boldness, patience, ambition, creativity, consciousness, and the skill to apply what they learned after having received it within the context of their socio-cultural environment, increasing their knowledge and participating in collaborative learning until it crystallized as knowledge that could be passed on to the next generation.

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### Introduction

The province of Sing Buri is a historical, religious, artistic, and cultural tourist destination that follows the sufficiency way of life. In this province, history, arts and culture, and a unique identity are preserved and restored. The village of Wat Phra Prang, where the Maenam Noi kilns are located, follows the One Tambon [district] One Product (OTOP) policy of the government of Thailand. This was the largest site of pottery production during the Ayutthaya period; the Fine Arts Department proclaimed the site as ancient national heritage on August 4, 2005. The kilns here, constructed in a cross-draft style, are found at a height above the community. Some kilns at this site resemble boats, resulting in their being named

Tao Prathun. The most common items found have been jars without handles, four-handled jars, bowls, mortars, pots, bottles, finials (*cho fa*), kettles, animal sculptures, and cannonballs. Maenam Noi is a significant archaeological resource, one of the great ceramic learning centers in the world, and is oriented with regard to a village on the OTOP model, in Sing Buri province.

This Maenam Noi kiln community produces pottery kitchenware, which is essential for human life as it has been lived for thousands of years. This was a center of pottery production, including of four-handled jars, which were used to pack and export goods in the Ayutthaya period, as is clear from the evidence of sunken vessels containing large numbers of this type of jar in near-shore areas of Thailand (e.g., Koh Sichang in the province of Nakhon Si Thammarat). The Maenam Noi kiln community also produced water pipes and earthenware used in Som det Phra Narai the Great (Ramathibodi III)'s palace, Phra Narai Ratchaniwet, in the province of Lopburi. This is evidence of the prosperity of the community, which ended due

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to war. Later, once the community was restored and the knowledge of local pottery traditions was recovered, the four-handled jars that had been produced began to be developed again, and a pottery community was re-established to bring potters income and to create a community identity that effectively corresponds to the governmental development category OTOP. However, after initial success, knowledge of pottery began to decline due to fewer and fewer potters or knowledge inheritors, the duration of creating income, the need for the use of large numbers of laborers, the use of productive resources (especially kilns) and inconsistencies between production (e.g., skill, creativity, craftsmanship, and product appearance) and limited usability (that is, all products are used as a souvenirs and decorations).

Therefore, the study of the community's role in the transfer of knowledge and the development of new generations of potters is an urgent task for the preservation of pottery practices. Such study would also contribute to the rehabilitation of the arts and culture that form part of the local identity of Sing Buri, allowing it to flourish as knowledge for later generations, drawing the attention of community members to and promoting their enthusiasm for creating pottery as income and as part of the economy of the community, and the supporting historical tourism in Sing Buri. Omission of work like this would result in a negative impact on the art and culture that form part of the national heritage.

## Literature Review

The Maenam Noi kilns are 16 kilometers from the city of Sing Buri, within Bang Rachan. This place was called Ban Khok Mo. Here, about 2,000 kilns are found, 150–200 meters from the west side of the Noi River, stretching from Sisak Suwan Wittaya School to Bang Rachan Hospital. The kilns were built in the early Ayutthaya period, from the fifteenth to the eighteenth centuries; they were large, double the size of those at the Si Satchanalai kilns, built during the Sukhothai period. Historical evidence indicates that large-scale pottery production emerged here as a result of three factors.

First, good clay was available from a lotus pond found behind Wat Phra Prang temple. This clay contains iron and zinc in large amounts, which improve its fineness and flocculation, giving it a solid texture. Most clay contains a large amount of sand, rendering pottery making difficult.

Second, the location had a good, reliable source of water in the nearby Noi River, which was used for consumption and convenience, as well as being the main transportation waterway to export products after production.

Third, it was near a good source of fuel in the local bamboo forest, including the *Dipterocarpus alatus* trees along the sides of the Noi River.

Krairuek (2002) described how the age of the celadon found in submarine shipwrecks was determined, using the following aspects: use of extraneous knowledge, stylistic analysis and comparison, artistic classification, description of artistic development, and verification with written evidence. This work led to the conclusion by Krairuek (2002) that the pottery was produced from the Maenam Noi kilns. The products of this area exhibited a rough texture and featured a brown coating.

Rukwong (1995) analyzed the style of Maenam Noi pottery and characterized its production, classifying the products using three criteria, as follows.

1. Soil color. White and yellow pottery was made from white clay, and it was mostly formed into jugs. The second was reddish-brown color pottery, made from red clay. (see Figure 2, 3)

2. Firing temperature. Works were baked at a low (800–900°C) or a high (1,200–1,230°C) temperature, which produced solid textures, with or without coating. (see Figure 1)

3. Product classifications.

3.1 Agricultural decoration, including finials, decorative roofs (hang hong), tiles, and eaves were baked at low and high temperatures, with and without coating.

3.2 Animal earthenware, depicting birds, lions, tortoises, tigers, giants, soldiers, angels, Buddha images, and candlesticks were produced.

3.3 Large amounts of earthenware containers, vases, jars, pots, bowls, water containers, mortars, and water pipes were made (Rukwong, 1995). (see Figure 2, 3)

The pottery making technologies used at Maenam Noi were derived from the three following sources.

1. After Sukhothai was named the capital, potters migrated to exploit the readily available clay, water, and fuel, allowing for complete firing. The area featured other resources as well and was convenient for transportation of finished goods.

2. Potters who fled war with the northern provinces during the Ayutthaya period.

3. Potters who were brought from China by King Intharacha.

The kiln complex emerged during the rule of King Intharacha over Ayutthaya (1408–1424). Chronicles report that Ayutthaya sought potters from China to make pottery in Thailand to respond to the domestic and international demand. (see Figure 1)



**Figure 1** Large and medium-sized four-handled earthen jars



**Figure 2** Earthen jars without handles, earthen spittoon, and mortar



**Figure 3** Earthen steamer, jug, and architectural decoration

### Methodology

The researcher studied existing research and documents on the study area. The method applied was a mixture of a qualitative method, used to examine the community, and a descriptive analysis, to investigate cultural heritage. The below steps were followed.

#### *Descriptive analysis*

The researcher compiled information on the study area to better understand it and the lifestyle, knowledge transfer, beliefs and rituals, styles and patterns, and knowledge associated with pottery here, using the following tools and methods.

1. In depth interviews with individuals.
2. Group interviews with the potters, distributors, and consumers.
3. Participatory and non-participatory observation.

#### *Population and Sampling*

The field study was conducted within the pottery community of Ban Khok Mo, in the subdistrict of Choeng Klat, district of Bang Rachan, province of Sing Buri. This community was targeted because it is the site of pottery knowledge and skill that has been in practice for more than 20 years.

Informant sampling: the informants in this study were 10 pottery experts in Maenam Noi kiln community, who preserved and developed Maenam Noi pottery styles including the four-handled jar. Pottery experts who had more than 20 years of direct professional experience in throwing, producing, and selling pottery were selected.

#### *Research Instruments*

1. Interviews were conducted with Maenam Noi pottery experts in Choeng Klat subdistrict, Bang Rachan district, Sing Buri province. The population included potters, local elites, and instructors.

2. Observations were made of the geosocial conditions/ways of life and the usability and beauty, patterns and forms, materials and processes, and trade of pottery in the Maenam Noi kiln community.

3. A video recorder and a voice recorder were used in the interviews and observations.

4. Documentary and research literature related to the Maenam Noi kilns was reviewed to investigate the geosocial conditions/ways of life, usability and beauty, materials and

production, and the international trade market related to Maenam Noi.

#### *Data Collection*

1. Observation. The researcher studied the way of life and environment of Maenam Noi in terms of lifestyle, the transfer and inheritance of pottery knowledge, the beliefs and rituals involved in making pottery, styles, utility and attractiveness, materials and production process, and trade in relation to Maenam Noi.

2. Interviews. The researcher conducted informal interviews with knowledgeable persons at Maenam Noi on the same subjects as above.

3. Data recording. Data were recorded by note taking during observations and interviews, voice recording, and filming.

#### *Data Analysis*

##### *Qualitative data analysis*

1. Typological analysis, non-theory-based event analyses, and analytic induction were used to investigate the inheritance of knowledge and the development of a new generation of potters in the Maenam Noi community. Descriptive data were collected on participant identity, time, and location; type of interview (group of individuals; in depth or not) or participatory observation; and the results of information checks with sources.

2. Analyzing and classifying data into the determined aspects in the content analysis and linking the facts on the cultural heritage of pottery knowledge at the Maenam Noi looms.

### Results and Discussion

The results of the pottery knowledge of the inheritance of knowledge and the work of newer potters at the Maenam Noi kiln indicated that the potters were from the Ban Khok Mo community, and they used advanced technology, high firing temperatures, and coating. The production style was influenced by Chinese potters.

A war fought with the Burmese led to the end of production at the Maenam Noi kilns in 1767, resulting in the burial of the kilns, with only broken pottery fragments along two kilometers of the banks of the Maenam Noi. Then, the remains of the kilns were discovered and study of them began, led by the Fine Arts Department and supporting agencies in 1986. Pottery production was revived in 1995.

The results of investigation of the Maenam Noi site indicated a prosperous community, the history of which could be separated into three periods. In the first period, a pottery community was established after a change in government; potters were forcibly transferred to a destination with abundant natural resources, materials, rich soil, good sources of water and fuel, easy transportation and labor, and a location close to the city of Ayutthaya. The product of pottery was consistent with the growth of international trade under the Ayutthaya regime. Potters were brought from China in the era of King

Nagarinthaarathiracha I in 1377. Pottery production and trade flourished, and more than 200 kilns were built in Maenam Noi. This prosperous period lasted for around 400 years, from the arrival of the Chinese potters to the loss of the city to the Burmese in the war. During the third period, which lasted until the excavation and restoration in 1995, the area featured numerous mounds that marked the sites of the kilns. Some kilns were found full of completed items that had been prepared to send out, but they were buried before being taken out. Many fragments of pottery were found along the north bank of the river. The community here depended in part on farming, gardening, and fishing in the Mae La River, and the pottery produced here was distributed locally and to nearby communities.

A conservation group was established in the community after excavation of the kilns to transfer pottery knowledge and original techniques. However, older pottery styles did not suit modern needs. The products that began to be produced were souvenirs. This affected overall incomes. Ultimately, the pottery community was beginning to disappear. It was hoped that this problem could be overcome by promoting community participation. The shared experiences in the community could be leveraged to identify specific problems and find the solutions (Srijuntrapun, 2018). Social structures are an important factor of knowledge transfer. A pottery dissemination committee was formed that consisted of the village headmen, with the support of the provincial administration, the subdistrict administration, and community members interested in pottery. The committee promoted and supported members as they attempted to make a living, develop their skills, quality of output, and patterns to ensure that they were up to date.

The descent knowledge of pottery techniques from the early era to the present period, 1995–2017, was accomplished through the members of the community with training and management support of the government sector delivered through social structures and administered by local governing bodies. As a result, organized activities were undertaken to transfer knowledge. This led to the community becoming aware and developing the self-perception that they would preserve the four-handled earthen jar, adhering to the original pattern and style, although these were not suitable for the current needs of the members of the community members or contemporary urban society.

The four-handled earthen jar, of various sizes, was adopted by tourists and customers looking for souvenirs from Sing Buri. The conservation group worked to relate the past and the present to maintain knowledge; however, the connection between the present and the future will fade if the mechanism of knowledge transfer does not respond to the social context and the demands of urban society.

Local knowledge must be transferred and products must be developed on its basis to support the lifestyle of community members and urban society for ultimate acceptability of the products worldwide. This will promote pride and confidence in the community, resulting in increased faith in it and acceptance of it by others.

Promotion of published media should relate to objectives and appropriateness, allowing those who receive messages to have the opportunity to learn and study, applying appropriate guidelines. Promotion of research and study should be

conducted across several dimensions, including knowledge of the cycle from development of the quality of raw materials, production technology, and product quality. The research group and the potters, manufacturers, and inheritors of this knowledge should work together and apply the results to improving and developing knowledge for acceptance in markets or adjusting it accordingly to suit the current circumstances, which would affect income generation and increasing acceptance.

Knowledge transfer within the household in the absence of a role model to recognize or perceive novelty is difficult for family members to recognize (Laeheem, 2018). Thus, family members should be role models for teaching and inheriting property. Instruction should come from close family members if possible, bringing expanded ideas and developing ideas gradually until a unique inheritance of expertise can be transferred.

Regardless of the precise contents, it was found that knowledge transfer from father to son, mother to daughter, master to apprentice, foreman to worker, scholar to community, and teacher to pupil through given roles requires further understanding.

The characteristics of the possessor of pottery knowledge must be understood in reference to 10 aspects: context, experience, learning, cognition, knowledge, love, drive, boldness and endurance, creativity, and acknowledgment and skill. These components are developed in the following.

1. Context. The possessor of knowledge must understand the proper context for pottery making, demand for it, available resources, and the appropriate environment for knowledge transfer. This requires clear communication within the unique context of the community and the array of social and cultural backgrounds.

2. Experience. The possessor of knowledge must have individual experience in multiple dimensions of pottery. They must develop perception, consideration, and analysis from this experience, as well as using practice to transfer fundamental knowledge, techniques, and methods in depth.

3. Learning. Learning must progress and accelerate throughout the course of life. Teaching is not simply a one-way transmission from the more knowledgeable to the less; it is also a cooperative process involving development of knowledge by both parties. Distanont, Khongmalai, Rassameethes, and Distanont (2018) found that learning by doing was the most effective method, where learners encountered problems and found solutions themselves. This allowed learners to then hand on knowledge to others. Thus, teachers and learners should learn cooperatively to continuously develop knowledge.

4. Cognition. Knowledge possessors must have both knowledge and a suitable way of transferring it to the learner or inheritor. Cognition is the cause and result of the transfer, involving knowledge of the role to play, what would be sufficient, the appropriate time to act, the state of the community, current events and ongoing changes, and the individuality of and differences among the learners.

5. Knowledge. The possessors have experience developed from perceptions and knowledge that could be developed from that experience. Understanding could explain and recognize problems, find solutions and techniques to confront or evade problems.

6. Love. The knowledge predecessor and the learner must

love the study of pottery in all its phrases. Here, the phrase “love is a weapon” applies. Love makes you fight for what you think is right, learn and pursue knowledge, create, and be patient enough to achieve your goals. It helps possessors lead and fight for what they think is right.

7. Drive. The learner must pursue identity and affection, continue to seek answers, and pursue knowledge. Experience in knowledge transfer in pottery shows an unclear role for drive because it was considered only necessary for conservation as a supplementary business, not as the primary part of earning a living. This reflects the demand that drive creates for personal experience that could be transferred to another.

8. Boldness and endurance. The knowledge possessor and the learner must both be brave and be able to endure with humility, which would not exist without mental security. Bravery sufficient to do the right thing brings mental security, attended by a developed consciousness, concentration, knowledge, self-confidence, and respect. The learner must be patient to achieve success through effort and brave enough to persist, although material benefits can destroy intention and determination.

9. Creativity. The learner should have sufficient creativity to produce work. Teachers should be creative. The National Advisory Committee on Creative and Cultural Education (1999) found that teachers could not develop learner creativity if they were not creative. Without creativity, novel things and values could not emerge. The learner must think creatively. To do so, the learner should exhibit traditional knowledge and be able to create new things from it, including all aspects of pottery: clay preparation, molding and decoration, baking, and other techniques to obtain the perfect products.

10. Acknowledgment and skill. The learner must acknowledge the value of things and respect knowledge possessors. Furthermore, the learner should have skill, not only capability or sensitivity but also learning skills, including listening, thinking, reading, and writing, that respond to social and cultural changes.

Knowledge possessors should be ready to learn, based on changes in the cultural and social context, and bring the learning experience together with the learner in the application of their own methods, ensuring its accumulation until it can be transferred to future generations. At the same time, the inheritor or learner should love what they have learned, be brave and patient, exhibit drive, have awareness and skills, and think appropriately within the given social and cultural context to enhance experience and develop the ability to create knowledge and be prepared to become the possessor of knowledge. (see Figure 4)

### Conclusion and Recommendation

In the investigation of knowledge transfer and production of new potters at the Maenam Noi kilns, it was shown that members of the Ban Khok Mo community had established a conservation group to transfer the original knowledge and to maintain the skill set of traditional pottery. However, if pottery styles did not respond to people’s needs and the neighboring communities, it could only be produced as souvenirs. This reduced role in income generation and led to the pottery community beginning to fade away.

Social structure was a part of knowledge transfer. A pottery committee was formed, which created a network to strengthen the community, administer regulations, and maintain regular practices to create a strong community. Kates, Parris, and Leiserowitz (2005) concluded that to promote sustainable development based on the principles of social development, community participation and community organization, which are important factors for community life, should be prioritized. This means that the community and committees were established, and the aims of the community were to promote and support the professions as well as developing the skills, quality of work, and form among the members.

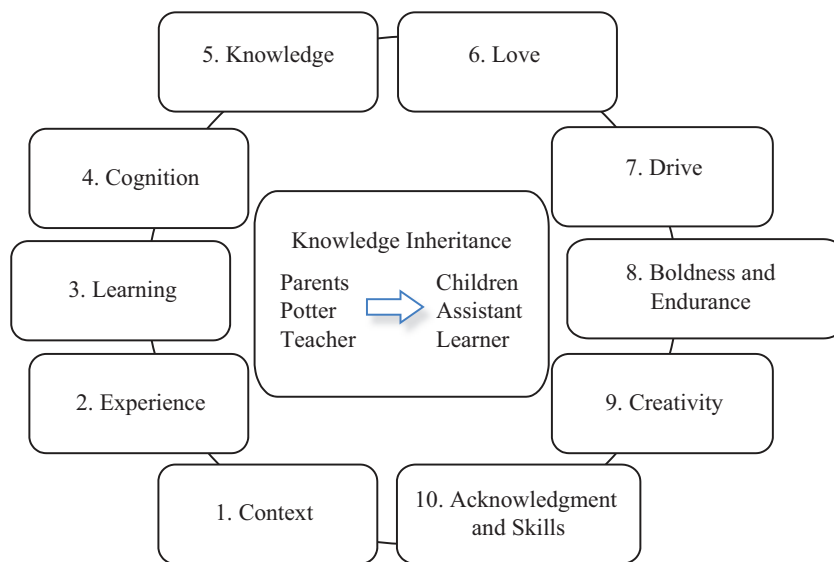


Figure 4 Knowledge transfer in pottery

The establishment of the pottery committee accelerated the development and strength of the community. Coordination with relevant government agencies was a necessary tool to strengthen the capability of the community to resolve problems such as granting the right of access to resources, the reality of the community environment, and the use of clay from the pond behind the temple. Over the past 10 years, knowledge transfer and the production of new potters in the community has decreased due to changes in the lifestyle and technology of the material and products, as well as the flow of other cultures from foreign countries. This mitigated the popularity of the product, which affected incomes. Ultimately, the members began to make their living from other sources, as pottery making is time-consuming, complex work that requires time. The process from clay preparation through molding and decoration to baking takes a month. The returns for this time did not meet needs and were insufficient for ordinary expenses. Additionally, this work did not provide a daily wage. This had a great impact on knowledge transfer and production of new potters, which reflected changes in the community's economy, the lifestyles of the residents, and the context and environment that would disappear with the knowledge of pottery.

### Conflict of Interest

There is no conflict of interest.

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