



ขอบคุณภาพจาก: อาจารย์สายุทธ์ โชติรัตน์

สรรสระอารยธรรมทวารวดีในนครปฐม : แนวทางสู่การ สร้างสรรค์เพลงชุด พุทธเจดีย์ทวารวดีศรีนครปฐม

Selected Essence of the Dvaravati Civilization in Nakhon Pathom: A Guide
to the Creation of the Buddha Chedi Dvaravati Sri Nakhon Pathom Suite

สายุทธ์ โชติรัตน์¹
Sarayut Chotirat

E-mail: jakhay1125@gmail.com
ภัทระ คอมขำ²

Pattara Komkhum

Received: December 25, 2018

Revised: April 29, 2019

Accepted: April 29, 2019

¹ Doctoral student in the Doctor of Philosophy in the Fine and Applied Arts Program, Faculty of Fine and Applied Arts, Chulalongkorn University.

² Assistant Professor, Dr., Thai Music Section, Department of Music, Faculty of Fine and Applied Arts, Chulalongkorn University.

บทคัดย่อ

สรรสรاةอารยธรรมทวารวดีในนครปฐม : แนวทางสู่การสร้างสรรค์ เพลงชุด พุทธเจดีย์ทวารดีศรีนครปฐม เป็นส่วนหนึ่งของวิทยานิพนธ์การสร้างสรรค์ ผลงานทางดุริยางคศิลป์ มีวัตถุประสงค์เพื่อศึกษาพื้นฐานทางสังคมที่เกี่ยวข้องกับ ความเชื่อ ชาติพันธุ์ ภาษา รูปแบบสถาปัตยกรรม ภูมิหลังทางประวัติศาสตร์ และ คุณตรีที่เกี่ยวข้องกับพุทธเจดีย์ 7 องค์ โดยใช้วิธีวิจัยเชิงคุณภาพ ผลการวิจัยพบว่า ส่วนที่ 1 ด้านความเชื่อของทวารวดีนับถือพระพุทธศาสนาในภัยเควาทสูงสุด ชาติพันธุ์ พบปراภู 2 ประเด็น คือ 1) ประชากรเป็นชนชาติมอญ 2) ประชากร เป็นชนชาติพม ประกอบด้วยความมอญ ໄຕ เป็นหลัก ภาษาลักษณะอักษรภาษา ใช้ 3 ภาษาคือ ภาษาบาลี ภาษาสันสกฤต และภาษาમુખ્યાબ્રાહ્મણ และรูปแบบ สถาปัตยกรรม อยู่ในรูปสูปเจดีย์ ส่วนที่ 2 การศึกษาภูมิหลังทางประวัติศาสตร์ ปراภู 2 ประเด็นคือ 1) จากนิทานพื้นบ้าน พระยากง พระยาพาน 2) สร้างขึ้น เพื่อเป็นที่บรรจุพระบรมธาตุ ถือเป็นสิ่งดึงดูดจิตใจสูงสุด ตั้งแต่พุทธศตวรรษที่ 3 จนถึงสมัยทวารวดีแท้ในพุทธศตวรรษที่ 11-16 รูปแบบการสร้างพุทธเจดีย์ ประกอบด้วย 3 ส่วน คือ ส่วนฐาน เรียกว่า บัวลัย รับอารยธรรมอินเดีย ศิลปะ ชวากาคกลาง ศิลปะจาม ศิลปะเขมร ส่วนเรือนธาตุ ยกเก็จที่มุ่มมีการยกกระเบาะ ประดับปราสาทจำลองหรือจะรำ สำนียอด อิทธิพลศิลปะชวากาคกลาง เขมร และจาม เป็นเจดีย์ทรงปราสาทยอด ทรงระฆังเป็นแบบหม้อน้ำ มีสำนียอด เป็นฉัตร ศิลปะชวากาคกลาง ส่วนที่ 3 ด้านคุณตรีที่เกี่ยวข้องกับพุทธเจดีย์ 7 องค์ ในจังหวัดนครปฐม สรุปผลการวิจัยเป็น 3 ประเด็น คือ 1) กลุ่มคุณตรีในทวารวดี การศึกษาประเด็นเครื่องคุณตรี พบเครื่องคุณตรี 3 ประเภท จำนวน 7 ชิ้น คือ ประเภทเครื่องดีด ได้แก่ พินน้ำเต้า พิน 5 สาย และจะเข้า ประเภทเครื่องตี ได้แก่ ฉิ่ง กรับพวง และประเภทเครื่องเป่า ได้แก่ สังข์ ชลุย และปี 2) กลุ่มคุณตรีทวารวดี ที่เกี่ยวข้องกับพุทธเจดีย์ในเมืองนครปฐม พบเครื่องคุณตรี 2 ประเภท จำนวน 2 ชิ้น คือ ประเภทเครื่องดีด ได้แก่ พิน ประเภทเครื่องตี ได้แก่ ระฆังหิน ทั้ง 2 ประเด็นเกี่ยวข้องกับการบูชา แสดงออกถึงความเคารพ 3) กลุ่มวัฒนธรรมคุณตรี ในเมืองนครปฐมที่เกี่ยวข้องกับพุทธเจดีย์ทั้ง 7 องค์ การศึกษาประเด็นวงคุณตรี

พบความสัมพันธ์ด้านคนตระกูลทั้งหมด 6 ชุมชน จำนวน 10 วงศ์ ประเภทวงดนตรีได้แก่ วงศ์เครื่องสายไทย วงศ์เครื่องสายผสม วงศ์ปีพาทย์ไทย วงศ์ปีพาทย์มอญ วงศ์โนหรี บทบาทความสัมพันธ์ด้านคนตระกูลที่เกี่ยวข้องกับพุทธเจดีย์ พบว่า มีบทบาทต่อชุมชนและวัฒนธรรม 2 ลักษณะ คือ 1) ในฐานะคนตระกูลประกอบพิธีกรรม 2) บทบาทของคนตระกูลที่มีต่อสังคม องค์ประกอบทั้ง 3 ส่วนใช้เป็นแรงบันดาลใจและจินตนาการในการสร้างสรรค์ผลงาน

คำสำคัญ: ทวารวดี, พุทธเจดีย์, ชาติพันธุ์, สถาปัตยกรรม, คนตระกูล

Abstract

Selected Essence of the Dvaravati Civilization in Nakhon Pathom: A Guide to the Creation of the Buddha Chedi Dvaravati Sri Nakhon Pathom Suite is an article based on the research data collected for the composition of the said suite. Its objectives are to study social fundamentals data on the beliefs system, ethnicity, language, architectural styles, historical background and music relationship associated with the seven ancient Buddha Chedi (Buddhist pagodas) of Nakhon Pathom by using qualitative research methods. The research findings can be divided into three parts.

Part 1: Belief system – the people of Dvaravati period were devout Theravada Buddhists; Ethnicity – the people of Dvaravati civilization were found to consist of 1) the Mon people and 2) people of different ethnic groups, mainly the Mon and Tai people; Language – they used the three languages of Pali, Sanskrit, and ancient Mon; Architectural structures – stupa and pagodas. **Part 2:** A study on the historical background of Dvaravati Buddhist pagodas revealed two sources of explanations for their construction – 1) the folktales of Phraya Kong Phraya Pharn; 2) they were built to contain Buddha's

relics and were the focal points of the Buddhist faith. This construction practice was originated in the 3rd Buddhist century and continued right up to the true Dvaravati period of the 11th-16th Buddhist century. The architectural structure of these Buddhist pagodas can be divided in three sections: the Bua Walai style of base was influenced by the Indian, Central Javanese, Cham and Khmer art styles; the middle section or Ruean that, which contains a chamber holding Buddha's relics, can be a Prasat-shaped or bell-shaped pagoda with indented niches at the corners decorated with replica Prasat or Sum Choranam arches; and the top section decorated with an umbrella or Chat in the Central Javanese art style. **Part 3:** A study of the musical relationship in the areas associated with the seven ancient Buddhist pagodas of Nakhon Pathom. Three aspects of the research findings can be summarized as follows: 1) Dvaravati music – a study of Dvaravati musical instruments identified seven instruments in the three categories of stringed instruments, consisting of Bin Nam Tao (Gourd harp), Bin Ha Sai (5-stringed harp) and Chakhe (zither); percussion instruments consisting of Ching (small cup-shaped cymbal), Krap Puang (castanet) and wind instruments consisting of Sang (conch shell), Khlui (flute) and Pi (oboe); 2) Dvaravati music associated with the ancient Buddhist pagodas of Nakhon Pathom – two musical instruments in two categories of musical instruments were found, namely, Bin in the stringed instrument category and Rakhang Hin (stone bells) in the percussion instrument category. Both instruments are associated with the acts of worshipping and reverence; 3) the musical culture of the areas associated with the seven ancient Buddhist pagodas of Nakhon Pathom – a study of the

musical ensembles in six communities of Nakhon Pathom Province discovered ten musical ensembles in the categories of Khrueng Sai Thai, Khrueng Sai Phasom, Piphat Thai, Piphat Mon and Mahori ensembles. the said musical ensembles play two important roles in the local society and culture: 1) religious roles, and 2) social role. All three aspects of the research findings provided the researcher with an inspiration and creative imagination for the composition of the present repertoire.

Keywords: Dvaravati, ethnicity, Buddhist pagodas, architectural, music

Introduction

This article is based on the research conclusions for the first objective of a doctoral thesis on the creation of the Buddha Chedi Dvaravati Sri Nakhon Pathom suite. It focuses on the study of the beliefs system, ethnicity, language, architectural styles, historical background and musical relationship in the areas associated with the seven ancient Buddhist pagodas of Nakhon Pathom with the goal of finding an inspiration for the creation of the present musical composition.

The ancient city of Nakhon Pathom was a city of historical and Buddhist importance built over two thousand years ago and was almost totally destroyed. It was a prosperous Buddhist city with hundreds of large Buddhist pagodas situated within and outside the city walls. The heart of the city used to be where Phra Prathon Chedi now stands. However, only Phra Pathom Chedi, Phra Prathon Chedi, Chulla Prathon Chedi, Phra Meru Chedi, Sangha Ratanadhatu Chedi, Phra Ngam Chedi and Phra Noen Chedi still stand in the old city of

Nakhon Pathom to this day. In addition, a large number of Buddhist images and stone Dharma Chakra were also found in this area (Nukul Chomphunich, 2008: 6).

These ancient structures and artefacts are symbolic testimonies to the reverence and strong Buddhist faith that existed during Dvaravati period as well as the development of artistic style of each phase of Dvaravati culture. They are the cultural heritages built by our ancestors under the religious, social, cultural, artistic and musical influences that had existed and evolved throughout the Dvaravati period. The researcher had studied these aspects of Dvaravati culture, focusing mainly on the musical tradition of Dvaravati period before the 16th Buddhist century. When examined in combination with other contemporaneous ancient artefacts and they were found to provide a reflection on the musical and cultural glory of Dvaravati period. Such musical culture has been transmitted and has continued to exist in presentday Nakon Pathom.

Nakhon Pathom is also home to a large variety of artistic and cultural traditions in the forms of folk songs, folk performance and traditional Thai music which are so popular that they have been widely transmitted and performed at various functions. This is especially true with the forms of Thai classical music that include Piphat, Khrueng Sai, Trae Wong (brass band), Khaen (bamboo mouth organ) and modified Klong Yao drum ensembles. These forms of music inspired the researcher to create a musical composition of the Buddha Chedi Dvaravati Sri Nakhon Pathom suite. The composition and ensemble practice of this suite put emphasis on the historical values and unique identity of the ancient Buddhist pagodas of Nakhon

Pathom in connection with their history, origins, belief systems and architectural styles. This composition can contribute to the transmission, education and sustainable development of the Thai classical music. The principles of Thai classical music composition were applied to the development of the melodic forms and performing techniques of this repertoire to reflect the symbolic roles of music through the use of sounds, lyrics, and choices of musical ensembles.

Research Objective

This article aims to study the social elements concerned: beliefs system, ethnicity, language, architectural styles historical background, and music relationship in the areas associated with the seven ancient Buddhist pagodas of Nakhon Pathom.

Research Methods

This research adopted the qualitative research methods and the following steps were taken:

1. Documentary research. Examination of relevant documentary data in the forms of books, theses, texts and academic articles found in various libraries and online databases.

2. Interviews of key informants. In-depth and individual interviews of key informants, who consisted with music scholars and musical artists, were conducted. Group interviews were also carried out with groups of community leaders and musicians. There were also fieldwork surveys of the areas where ancient ruins were situated and where the relevant musical ensembles were found.

3. Analysis and synthesis of research data. Descriptive analysis technique was used to present the analysis results.

Research Results

1. Dvaravati beliefs system, ethnicity, language and architectural styles

1.1 Belief system A study of the belief systems and religions of the groups of people who lived in Nakhon Pathom during the Dvaravati period found Hinayana Buddhism and Theravada Buddhism to be the principal religions of these peoples. Such findings were also confirmed by the styles and forms of religious artworks discovered in the areas. Other belief systems (in smaller number and at fewer sites) found are Hinayana Buddhism, Mahayana Buddhism and Brahminism. Other area-specific belief systems were also found.

1.2 Ethnicity, language and architectural styles

1.2.1 Ethnicity The social characteristics associated with the different ethnic groups of Dvaravati period led to two speculations: 1) Dvaravati was populated by the Mon people. This speculation was based on the discovery of the oldest Mon inscriptions in this area, which are even older than the 12th Buddhist century Mon inscriptions found in Myanmar. These inscriptions are clear evidences of the Mon population of Dvaravati period; 2) Dvaravati was populated by diverse ethnic groups who mainly belonged to the Mon and Tai ethnic groups. The abundance of natural resources in the central plains of Thailand was cited as the reason for visits to the area by foreign traders from China, India and Persia.

1.2.2 Language

The characteristics of Dvaravati scripts

indicate the existence of three languages – Pali, Sanskrit and ancient Mon. Pali and Sanskrit were introduced to the region by the Indian people who settled in Suvarnabhumi during that period and both were considered the official languages of Dvaravati. Although Pali and Sanskrit were considered the languages of the educated and the religious languages, they were not the indigenous languages. Both languages appear on coins and terra cotta pieces. Ancient Mon language that flourished in the central region of Thailand was the first and the most likely indigenous language of the Dvaravati kingdom. The earliest ancient Mon inscriptions were discovered in the old city of Nakhon Pathom.

Professor Diffloth suggested that the Nyah Kur language, used in the areas that are Thailand's present-day central and northeastern regions, is the remnant of the ancient Mon language of Dvaravati kingdom. Several linguists explained its existence for the fact that it belongs to the Mon-Khmer language group which is a branch of the Austroasiatic language family and the ancient language of Southeast Asia. Ancient Mon language was the language of various groups of people in that region. Most Dvaravati scripts were influenced by the Indian scripts of Pallava and post-Pallava periods. Ancient Mon and ancient Khmer scripts were also used (Gerald Diffloth, cited in Thida Saraya, 1995: 194-195).

1.2.3 Architectural styles Dvaravati architectural styles can be divided into two categories: 1) Architecture – the architectural structures found in the old city of Nakhon Pathom are mainly large stupa or Chedi (pagoda) with square or octagonal bases. Comparative studies of contemporaneous Indian art and the art of

Dvaravati's neighboring countries, the forms of present-day pagodas and other forms of art reflect the rise of Buddhism and the highly developed craftsmanship in the region. These data point to the artistic and cultural relationship of Dvaravati kingdom with other regions. 2) Sculptures. – the sculptures found in the old city of Nakhon Pathom were generally created as religious symbols. Bas-relief sculptures of Dharmacakra (the Wheel of Law) with intricate designs were also found. Buddha images in the Pathom Thetsana gesture were also found in abundance in the ancient city of Nakhon Pathom. Other forms of Dvaravati sculptures include Buddhist images, Bhodisattava images, deity and human figures of Kupta art style. These works of art were created as religious offerings in Buddhism.

2. Historical background of the seven ancient Buddhist pagodas

2.1 Historical. The research found all seven ancients Buddhist pagodas of Nakhon Pathom to have been built as places of worship and symbolic representations of Buddhism and the Lord Buddha. Historical evidences were used to determine the age of these religious structures and all of them have been identified as belonging to the period from the early Dvaravati culture of 3rd Buddhist century to the period of true Dvaravati culture between the 11th - the 16th Buddhist century. Their ages can be summarized as follows:

Table 1: Periods and ages of the seven ancient Buddhist pagodas

<i>Buddha Chedi</i>	<i>Period</i>	<i>Age</i>
Phra Pathom Chedi	Suvarnabhumi	Around the 3 rd Buddhist century
Chulla Prathon Chedi	Dvaravati	Around the 10 th Buddhist century
Phra Prathon Chedi, Sangha Ratanadhatu Chedi, Phra Noen Chedi and Phra Ngam Chedi	Dvaravati	Around the 11 th Buddhist century
Phra Meru Chedi	Dvaravati	Around the 14 th Buddhist century

Based on historical evidences, there are two speculations on the origin of these ancient Buddhist pagodas: 1) According to the folktales of Phraya Kong Phraya Pharn and the legends of Phra Pathom Chedi and Phra Prathon Chedi, the construction of these pagodas was associated with the Buddhist beliefs in sins and merits. Phra Pathom Chedi was built in dedication to the father of a king (Phraya Pharn); Phra Prathon Chedi was built in dedication to Yai Horm, the woman who raised Phraya Pharn from birth; Sangha Rattanathat Chedi was also built in dedication to the Phraya Pharn's father; and Phra Noen Chedi was built in dedication to Yai Horm. 2) All seven ancient Buddhist pagodas – Phra Pathom Chedi, Phra Prathon Chedi, Chulla Prathon Chedi, Phra Meru Chedi, Sangha Ratanadhatu Chedi, Phra Ngam Chedi and Phra Noen Chedi – were built with the primary goal of containing Buddha's relics. It could also be the relics of an important persons. These pagodas subsequently became the religious symbols with sentimental value for Buddhists.

2.2 Architectural style. The research found the architectural styles of all seven ancient Buddhist pagodas of Nakhon

Pathom to be influenced by two artistic styles – the Amaravadi and Kupta styles of Indian art that feature Rakhang (bell)-shaped and Prasat-shaped bodies. The bell-shaped pagodas are small pagodas with a round body in the Mornam (water pot) shape situated on a simple square or circular base. The Prasat-shaped pagodas have a Ruean that (chamber containing Buddha's relics) body set on a square or octagonal base with a decorative umbrella at its apex. It was assumed that all seven ancient Buddhist pagodas were also influenced by the Central Javanese art style. These pagodas are large indented Prasat-shaped pagodas of a complex design and were set on a Prataksin base. The indented corners were decorated with extended porticos or Sum Choranam arches with sculpture adornments. A large Buddha image might have been placed in each Sum Choranam arch or portico at its four corners. The bell-shaped or Mornam-shaped pagodas were: Phra Prathon Chedi, Phra Meru Chedi, Chulla Prathon Chedi, Sangha Ratanadhatu Chedi, Phra Ngam Chedi and Phra Noen Chedi. All seven pagodas share the same three key components of all pagodas that are built on bases: **1) Base.** The pagodas have a large raised foundation to support a Prataksin base that is placed on its top. Most bases have the Bua Walai design, which is the unique feature of all Dvaravati pagodas. These bases also had other artistic features of the Central Javanese, Cham and Khmer art which were also found in the neighboring countries during the period of early contact with Indian civilization; **2) Ruean that.** This is a walled structure set on top of a Bua Walai base with decorative Bua Choeng (lotus-shaped border) at its bottom and Bua Rad klao (lotus-shaped decoration) at its top. Ruean that generally had indented corners in

the shape of Prasat or Sum Choranam arches. These features are key testimonies to the architectural relationship of Dvaravati pagodas with the Indian art; and **3) Apex**. Since most ruins of Dvaravati pagodas were found with only the base and Ruean that sections, it was not clear whether these pagodas was built in the Indian style of pagoda that influenced the Central Javanese, Cham and Khmer art styles or in the Prasat-shaped or bell-shaped body (Ruean that) with an umbrella at its apex in the Central Javanese art style.

3. Musical relationship within the areas associated with the seven ancient Buddhist pagodas of Nakhon Pathom Three main aspects of such relationship can be summarized as follows:

3.1 Dvaravati music

Dvaravati culture which thrived in the central region of Thailand spread to other regions through the assimilation of its culture, religion and belief systems. Studies of archaeological finds and ancient artifacts revealed distinctive forms of Dvaravati musical instruments which can be divided into seven types as follows:

Sang or conch shell This is a type of sea shell that turns white, the color of purity and blessing, after being thoroughly polished. Blowing through a hole drilled into one of its ends produces such beautiful sounds that have earned it the name of Trae Sang. This type of wind instrument has been prevalent across Southeast Asia since ancient times. There are evidences confirming its appearance in the region from the 12th Buddhist century onward (Udom Arunrat, 1983: 28).



Figure 1: Sang (conch shell)

Source: Thai Khadi Research Institute, 2009.

The symbol known as Sriwatsasang that appears on Dvaravati coins suggests that the prototype of this instrument might have been originated in India or possibly in Myanmar or Vietnam. The Dvaravati coins found in Thailand feature diverse forms of Sriwatsasang and have little resemblance to their Indian prototype. Most Sriwatsasang symbols usually appear with other markings which are mainly the auspicious symbols associated with the monarchy. In Southeast Asia these symbols were revered and used in a coronation ceremony (Nuea-on Khrueathongkhiew, 2007: 105-106).



Figure 2: Inscription on Dvaravati silver coins with depiction of a conch shell.

Source: Professor MC Supatradis Diskul Digital Library, 2018.

It is believed that Sang in Dvaravati musical culture is a Brahministic or Hindu symbol of fertility and prosperity. As a wind instrument made from natural material, Sang may be used in Brahministic rituals for its auspicious property. Dvaravati kingdom also had several groups of people who were Brahmin or Hindu

Bin Ha Sai (5-stringed Bin) is a type of musical instruments that no longer exists. Archaeologists detected pictures of them in Dvaravati bas-reliefs. This type of Bin lacks a nom (resonator) for sound control. Ajarn Montri Tramote had Bin Har Sai reconstructed from this bas-relief and included them in the musical ensemble that accompanied the performance of Dvaravati dance series.

Bin Nam Tao (Gourd Bin) is one of the oldest Thai stringed musical instruments. It closely resembles Bin Pia found in the northern region of Thailand. The sound box of Bin Nam Tao is made from a halved dried gourd and the Bin has only one string (Thanit Yupo, 1980: 72).

Krap (clapper) There are evidences indicating that this ancient type of clapper generate sounds by hitting it on another hand. There can be both Krap Diao (single) and Krap Khu (double) clappers which are probably known today as Krap Phuang. Sujit Wongdes stated that Krap Khu were an ancient musical instrument of Southeast Asia which might have existed even before the Dvaravati period (Sujit Wongdes, 2008: 114).

Ching (cymbal) is a type of Thai percussion musical instruments made from thick bronze with round and flared lips. It comes in a set of two cymbals.

Bin Nam Tao, Bin Ha Sai and Ching are the musical instruments depicted on the Dvaravati sculptures found at Khu Bua archaeological site. Depictions of musicians on stucco basreliefs from this archaeological site in Ratchaburi Province are key testimonies to the presence of Indian culture in this region. There are Dvaravati bas-reliefs depicting musicians of both sexes playing the Bin and Ching that were directly imported from an Indian town of Nachna Kuthara, suggesting that they were popular in Dvaravati period. These instruments are very similar to the musical instruments of present-day Mahori khrueng Si ensemble.

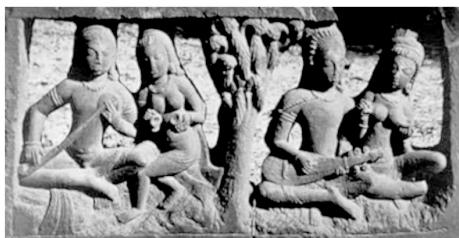


Figure 3: Left: Female musicians, found at the ancient city of Khu Bua in Mueang Ratchaburi District of Ratchaburi Province. Right: A bas-relief of male and female musicians playing Bin and Ching from the town of Nachana Kuthara in India.

Source: Professor MC Supatradis Diskul Digital Library, 2018.

Khlui (flute) There were mentions in ancient Chinese documents of the existence of human settlements, cities and states in the Chao Phraya riverine and its vicinity during the time of Dvaravati period where there were gourd blowing and drum beating (Chalerm Yongbunkerd, “Arnachak Dvaravati Eak Khrung (Dvaravati Empire Again)” in Sam Thaharn Suea, Vol. 3, No. 6, May 1964, cited in Sujit Wongdes, 2008: 122).

Chakhe (zither) There were relatively clear mentions of the population of this region during the Dvaravati period being the Mon people. This was confirmed by evidences of the cultural exchanges and assimilation that took place at the time. Udom Udomrat stated that Chakhe is a type of percussion musical instruments played with wooden sticks, called Kotha. Since Chakhe is similar in appearance to a crocodile it was assumed that Chakhe came from the Mon culture (Udom Udomrat, 1986: 104-106).

Studies of Dvaravati musical instruments reveal three types of instruments: 1) Stringed instruments consisting of Bin, Bin Har Sai and Chakhe; 2) Percussion instruments – hitting two items together to create sounds is the oldest form of musical instrument known to mankind. This type of instruments is mainly used to produce rhythmic sounds. Ching and Krap Phuang are two of such instruments found in the Dvaravati period; and 3) Wind instruments – this type of musical instruments is usually made of natural materials from different flora and fauna. The wind instruments of Dvaravati period are Sang, Khlui and Pi.

3.2 The relationship between Dvaravati music and the ancient Buddhist pagodas of Nakhon Pathom

Evidences of the musical relationship between Dvaravati music and the ancient Buddhist pagodas of Nakhon Pathom are scarce. There are only two direct relationship:

3.2.1 Bin Nam Tao (Gourd Bin) A caption provided by the Fine Arts Department for the stucco bas-relief of the Kinara (a mythical being) figure at Chulla Prathon Chedi stated that it was a depiction of a winged being which could be Garuda or a deity of

the Khonthan type playing a musical instrument with similar appearance to Bin Nam Tao, a folk musical instrument that is still played today in the northern region of Thailand (the Fine Arts Department, 1999: 40-41).



Figure 4: Kinara or Khonthan playing Bin, found at the old city of Nakhon Pathom
Source: Sarayut Chotirat, 2018.

Bin is a musical instrument with close relationship to Buddhism. It was played as an offering, probably the highest form of religious offering, to either Buddha or gods. Therefore, it is unlikely that depictions of Bin on religious structures would be there for decorative purpose alone but was more likely to be placed there to entertain and please the sacred beings that they revered. It is a form of offering associated with the belief in the construction of pagoda in the Theravada Buddhist tradition that came with the spread of Buddhism and Brahminism to the central region of Thailand. Bin performance was popular and pervasive around the Dvaravati period of 11th – 16th Buddhist century.

3.2.2 Dvaravati Rakhang Hin (stone bells) This type of musical instruments was found in abundance at various religious

structures, such as Phra Pathom Chedi and Chulla Prathon Chedi. Their presence at any ancient town is the evidence that such town or settlement was under the influence of Dvaravati culture. It can be said that stone bells and the use of stone in construction or artworks were unique characteristics of Dvaravati period. The presence of stone bells at an archaeological site can be used to determine the date the site. Stone bells are mainly found at Dvaravati archaeological sites in the central region of Thailand dated to the 11th – 16th Buddhist century (Sunirat Detwiriyakul, 2005: 11).



Figure 5: Stone bells surrounding Phra Pathom Chedi

Source: Sarayut Chotirat, 2018.

The researcher compared the sounds made by stone bells with those of metal bells and found that the thick surface of stone bells required more force in hitting to produce comparable sound pitches to those of metal bells. Stone bells are found in abundance at major archaeological sites, especially at Phra Pathom Chedi, and are normally hanged up and hit with a piece of wood. They usually come in various sizes and the ones shown in the picture are all large size bells. Dvaravati stone bells were used for similar purposes to drums, which were to give out signals or to provide musical accompaniment to religious rituals.

3.3 The musical culture of Nakhon Pathom and its relationship with the areas associated with the seven ancient Buddhist pagodas

Data on this topic were collected from interviews and documentary research. It was found that the relationship between the musical culture of Nakhon Pathom and Buddhist pagodas is mainly area specific. Data collected from the study of six communities and ten Thai classical music ensembles are as follows:

The musical relationship in Wat Phra Ngam and Phra Pathom Chedi communities The musical ensembles found in these two communities are:

1) Thanongsilp Piphat ensemble



Figure 6: Khru Manop Chomphunich, the current ensemble leader.

Source: Sarayut Chotirat, 2018.

Thanongsilp ensemble belongs to a prestigious family of well-known musicians with a long history of musical talents and achievements that have been passed on through generations from the reign of King Rama VI to the present day. The founding father of Thanongsilp ensemble was Mr. Thanong Chomphunich who had passed on his musical knowledge to all his children. The ensemble's

current leader is Mr. Manop Chomphunich. The significant role that this ensemble has for the local communities and Buddhist temples is its musical contribution to the religious rituals held in the local and outside communities. At present, Thanongsilp ensemble still provides musical accompaniment for the religious rituals performed at various Buddhist merit-making functions, including Kathin, Thet Mahachat, monk ordination, wedding and funeral ceremonies as well as at festivities.

2) Raengpetch family Piphat ensemble and the music house of Khru Charoen Raengpetch



Figure 7: Left: Khru Pui Raengpetch, the first leader of Pathom Duriyang ensemble. Far right: Khru Woot Raengpetch, the second leader of Pathom Duriyang ensemble.

Source: Sarayut Chotirat, 2018.

Pathom Duriyang ensemble, founded by Khru Pui Raengpetch, is located in Phra Pathom Chedi Sub-District of Mueang District in Nakhon Pathom Province. It is of similar age to the Thanongsilp ensemble. When Khru Pui Raengpetch was still alive all musicians of this ensemble were members of the same family. After the death of Khru Pui, Khru Woot Raengpetch, his son, inherited the

ensemble and was the last generation of this famous ensemble as it had since dissolved and ceased performing. However, the family still holds on to the musical instruments of its Piphat Thai and Piphat Mon ensembles. The important role that this ensemble had for the community and local Buddhist temples was to provide musical accompaniment for various religious rituals. The ensemble still retains its musical roles by performing at religious rituals and merit-making functions held at various Buddhist temples, including Kathin, Thet Mahachat, monk ordination, wedding ceremonies as well as Wai Khru ritual and festivities. The family owns Pihat Thai, Khrueang Sai and Piphat Mon ensembles.

3) The music house of Khru Charoen Raengpetch

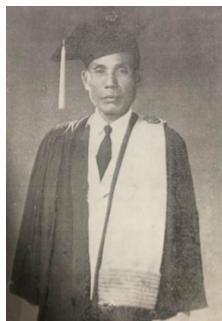


Figure 8: Khru Charoen Raengpetch

Source: Sarayut Chotirat, 2018.

Khru Charoen Raengpetch's special skills in Piphat and Ranat Thum music was well-known and his reputation spread to Bangkok. After strict training and highly developed musical skills his father had him placed as an apprentice musician with Luang Pradit Phairoh (Sorn Silapabunleng). Having studied under this great music master, Khru Charoen developed profound and extensive musical

skills to the extent that he was proficient in both the theoretical and practical aspects of Thai classical music and was considered a musician with all-round mastery. He was famous among the Thai classical music circle for his musical expertise and performing experiences in the Piphat Thai, Piphat Mon, and Khrueng Sai ensembles. He was also well respected in the community and community members enrolled their children to take music lessons with him.

4) Mitr Bunleng Khrueng Sai Phasom ensemble



Figure 9: Khru Wanchai Phuttakhunraksa, the current ensemble leader

Source: Sarayut Chotirat, 2018.

This ensemble was founded approximately 30 years ago. Its musicians were retired civil servants and musical artists from Nakhon Pathom. The majority of them were amateur musicians who came together to form an ensemble, thus, the name of Mitr Bunleng (performing among friends) was derived. During its initial period, the ensemble did not have permanent musicians and had to invite musicians from Bangkok to perform. The important role of this Khrueng Sai ensemble is to perform at merit-making functions held at various Buddhist temples, including monk ordination and wedding

ceremonies, festivities and funerals. Its educational role is to promote the love of music and to instill moral and ethical principles among children from early age to produce good musicians. Such roles contribute to the promotion and support of the transmission of Thai classical music knowledge.

5) Ajarn Krisada Rajaphat Piphat ensemble



Figure 10: Ajarn Krisada Rajaphat (deceased), owner of Ajarn Krisada Rajaphat Piphat ensemble

Source: Sarayut Chotirat, 2018.

This musical ensemble was founded around 1996 and has been in existence for over 20 years now. It has continued to serve both local and outside societies/communities. It also had an important role in the founding of Nakhon Pathom Rajabhat University's Thai classical music ensemble, which is a Piphat ensemble that performs at various religious rituals, festivals and traditional celebrations for both public and private entities. The University's ensemble serves the society and provides basic musical training for its students. Ajarn Krisada Rajaphat Piphat Ensemble has developed good relations with the community and the University through the use of music culture to unite community members together.

The ensemble's important ritual and social roles are the sources of the community's respect and pride for this ensemble which has also assumed the role of the community's musical culture leader.

The musical relationship in Don Yai Horm

Community The following Thai classical music ensembles were found in the community:

6) Khru Jerm Songyu Khrueang Sai ensemble



Figure 11: Khru Jerm Songyu, the first owner of Wat Don Yai Horm Khrueang Sai ensemble

Source: Sarayut Chotirat, 2018.

This Khrueang Sai Phasom ensemble was founded by Khru Jerm Songyu before 1956. All members of the ensemble take part in both the musical and educational roles of transmitting of musical knowledge to future generations. They contribute to the community as well as to Buddhist temples and schools in and outside Don Yai Horm community. The ensemble still performs at religious rituals and meritmaking functions, including at Kathin, Thet Mahachat, monk ordination, wedding and Wai Khru ceremonies as well as at festivities and funeral ceremonies. It also performs the educational role of transmitting musical knowledge to children and youth in the community.

7) Wat Don Yai Horm Piphat Mon ensemble

This ensemble was founded in 1977 after the death of Luang Phor Ngern when the temple needed to commission a musical ensemble to perform at the 100-day anniversary of Luang Phor Ngern's passing. To cut down on the cost of hiring a musical ensemble from outside, this Piphat Mon ensemble was established under the supervision and training of Khru Sombun Amthap. The ensemble plays important role in providing musical accompaniment at various religious and merit-making functions as well as at funeral ceremonies. It also provides the educational role of transmitting musical knowledge to children and youth in the community.



Figure 12: Taphone Mon, Mong and Khong Mon of Wat Don Yai Horm Piphat Mon ensemble

Source: Sarayut Chotirat, 2018.

8) Sangasin Piphat ensemble

This ensemble is considered an old musical ensemble that had long existed in Wat Don Yai Horm community even before the establishment of Wat Don Yai Horm School in 2465. At present, Sangasilp ensemble had dissolved due to the lack of successors. None of its musical instruments can be found today. Its important role in the society and community in providing musical

accompaniment for religious rituals both in and outside the community was also gone.

The musical relationship in Phra Prathon community At present, there is no trace of any musical relationship in Phra Prathon community itself but it can still be observed in nearby communities through the following musical ensembles:

9) Wat Sam Krapue Phueak Piphat ensemble

This Piphat ensemble is considered an old musical ensemble that had existed alongside the local Buddhist temple and community. It had been dissolved and, due to the lack of proper maintenance, its musical instruments had been scattered to various places. Some of the instruments kept at Wat Sam Krapue Phueak School and Thesabarn 2 Wat Sanaeha School are still in good working conditions while others are damaged. The important roles of this ensemble included the provision of ritual music at religious ceremonies held in Buddhist temples and the transmission of musical knowledge to students of Wat Sam Krapue Phueak School.



Figure 13: Conditions of the musical instruments kept at Wat Sam Krapue Phueak School and Thesabarn 2 Wat Sanaeha School

Source: Sarayut Chotirat, 2018.

The musical relationship in Thammasala community

Since the community's previous Thai classical music ensemble moved to another location, its history came from the interview data with the abbot of Thammasala Buddhist temple. There used to be a Piphat ensemble/Likay troupe by the name of Yok Thai Sakul Thong in the community. This ensemble provided entertainment and musical services to both local and outside communities. After the ensemble moved out, community members have to engage outside musical ensemble to perform such services. Nowadays, no trace of any musical relationship exists in Thammasala community but it can still be seen in Wat Sam Krapue Phueak ensemble of the adjacent Prathon community.

The musical relationship in Suan Anan (Phra Meru) community

There is also no direct trace of musical relationship in this community, but it can still be seen in the musical ensemble of adjacent communities as follows:

10) Khru Vard Piphat Mon ensemble

Khru Vard Munsrichan was named the 1999 National Artist in Thai classical music by the National Culture Commission of Thailand. He is a well-known Thai classical musician and maker of Ranat Ek, Ranat Thum and various musical instruments with leather covering, especially the Taphone Thai and Taphone Mon drums. His unparalleled skills in these fields are widely recognized by people in the Thai classical music circle. Khru Vard is well-respected by musicians at the Office of Music and Drama of the Fine Arts Department as well as by musicians of several music houses



and Thai classical music ensembles in Bangkok, Nakhon Pathom, Nonthaburi, Ratchaburi, Petchaburi, and Suphanburi. He has earned the designation of “Khru Vard Ranad Keo”.



Figure 14: Khru Vard Munsrichan

Source: Sarayut Chotirat, 2018.

Khru Vard Munsrichan’s outstanding musical talents have the following roles in the community. 1) The social role of music in the community – his music promotes adherence to worthy customs and traditional practices by making the performance of Thai classical music at religious functions part of the community’s religious routines; 2) the religious role of music in Buddhist temples and in the lives of Buddhists – the ensemble still plays important role at religious functions like Kathin, Thet Mahachat, monk ordination and funeral ceremonies which are still held at both local and outside Buddhist temples; and 3) the educational roles of music – with a strong determination to preserve Thai classical music for future generations, Khru Vard has dedicated himself to the transmitting of musical skills and the instilling of moral and ethical conducts upon his students. Apart from teaching classes at his own house, Khru Vard also teaches at various schools and educational institutions without charges.

The present study on the musical culture associated with all seven ancient Buddhist pagodas reveals the musical relationships between the communities and the ten musical ensembles in six communities. There are two sources for such musical relationships. The first source came from the selftaught musical skills of the musical ensemble leaders, who may have also received formal instruction from instructors in the formal educational system or from local Thai music masters. Equipped with the necessary training and skills these musicians acquired musical instruments and founded their own musical ensembles. The second source of musical relationship came from the transmission of musical skills from the musicians' ancestors.

Table 2: The musical relationships with the musical ensembles in six communities and current status of their continuity

Community	Location	Ensemble type	Ensemble head	Status	
				Ongoing	Terminated
Phra Pathom Chedi Community	Phra Pathom Chedi	Khrueang Sai Phasom	Khru Wanchai Phuttakunraksa	✓	
		Khrueang Sai Thai			
		Piphat Thai Piphat Mon	Khru Manop Chomphunich	✓	
Wat Phra Ngam Community	Phra Ngam Chedi	Piphat Thai Piphat Mon	Ajarn Krisada Darnpradit		✓
					✓
Wat Don Yai Horm Community	Phra Noen Chedi	Khrueang Sai Phasom	Khru Jerm Songyu		✓
		Khrueang Sai Thai			
		Piphat Thai	Khru Sa-nga Thueanthamkeo		✓
		Piphat Mon	Khru Sombun Amthap		
Thammasala Community (neighboring communities)	Phra Sangha Ratanadhatu Chedi	Wat Sam Krapue Phueak Piphat Thai ensemble	Sam Krapue Phueak Buddhist temple		✓
Phra Prathon Community (neighboring communities)	Phra Prathon Chedi, Chulla Prathon Chedi				
Suan Anan Community (neighboring communities)	Phra Meru Chedi	Piphat, Piphat Mon, Khrueang Sai, Mahori	Piphat, Piphat Mon, Khrueang Sai, Mahori	✓	

Transmission style – two transmission styles were discovered in the areas under study: musicians in three musical ensembles were trained by their musician ancestors while musicians the remaining ensembles were trained by music teachers in Bangkok and by local music masters. Many of the local musical ensembles no longer exist today and their history can only be put together through the

narratives of local musicians and the musical instruments that still remain. Since Nakhon Pathom is situated at close distance to Bangkok, the musical transmission that most local musicians received has been in the form standardized Thai classical music. Musicians of Nakhon Pathom are familiar with playing in an ensemble setting, particularly in Piphat ensemble, which has existed here for over 80 years ago. From past to present, a large number of musicians in the communities under study is found to have received musical training from music teachers in Bangkok. Notable musical relationships that exist among the Thai classical music ensembles of Nakhon Pathom are: the musical relationship between Khru Luang Pradit Phairoh (Sorn Silapabunleng), a nationally renown Thai music master, and musicians of the Raengpetch family's Piphat ensemble in Phra Prathom Chedi Community of Muaeng District, Nakhon Pathom Province; the musical relationship between Khru Thongdee Sujaritkul, Khru Juthamani Worawitsattathayarn, Khru Benjarong Thanakoses, Khru Nipa Aphaiwong and Mitr Bunleng Khruueang Sai ensemble in Phra Ngam Community; and the musical relationship between Khru Sakol Keo-penkard and Khu Vard Munsrichan Piphat ensemble of Muaeng District in Nakhon Pathom Province. The study discovered the existence of a strong musical relationship among local musicians that has been developed through a close-knitted network of musicians and the borrowing of each other's musical techniques in their performance. In many communities, musicians are both friends and relatives. The above-mentioned musical relationships produce similar musical styles among local and Bangkok musicians. Past and present music masters and musicians of Nakhon Pathom Province

have continued to adequately receive and transmit Thai classical music skills and knowledge to enable local musical ensembles to satisfactorily serve their communities to this day.

Examination of the musical relationships between local Thai classical music ensembles and the areas associated with the seven ancient Buddhist pagodas of Nakhon Pathom found two key social and cultural roles that these ensembles play in their communities:

1. The roles of music in religious rituals. There are three ritual roles of 1) Buddhist rituals such as the offering of meal to monks for merit-making purpose, Kathin and Thet Mahachat ceremonies; 2) life-cycle rituals such as monk ordination and wedding ceremonies. Piphat Mon and Piphat Thai ensembles are most popular with these rituals while Khrueng Sai ensemble is sometimes preferred for funeral ceremonies; 3) at present, the ritual roles of Thai classical music are most prevalent while its role in providing musical accompaniment to the singing or dance drama performance has significantly dwindled and become rare.

2. The role of music in society. Many musical ensembles are involved in the educational role of providing instruction in Thai classical music at educational institutes and to interested persons. Not all musical ensembles under the present study perform this role because students tend to seek music instruction from selected ensembles only. In the past, musicians only train their children or relatives with the convenient goal of having them join their ensemble as the next generation of musicians. This style of training among family members can no longer be found in the areas today.

Conclusion and Discussion

The research results can be divided into three parts: 1) Belief system, society, culture and art of Dvaravati period; 2) History and architectural styles of Dvaravati period; 3) Musical relationship in the areas associated with the seven ancient Buddhist pagodas of Nakhon Pathom.

Part 1: Belief, system society, culture and art of Dvaravati period

Theravada Buddhism was the most popular faith of Dvaravati period. Although there were evidences of the presence of Mahayana Buddhism and Brahminism during that time, both faiths were areaspecific to the southern region of Thailand only. Theravada Buddhism was most popular and more influential than any other Buddhist sects and religions. The social and cultural diversities of Dvaravati kingdom were evident from its population of diverse ethnic groups with the Mon and Tai groups being the majority population. Such diversities were due to the fact that Dvaravati kingdom was situated on major inter-regional trade routes and had access to the seas. Dvaravati scripts had a long history of evolvement that dated to the pre-historic period. Ancient Mon was the area's first indigenous language that had evolved into a written language during the Dvaravati period.

Dvaravati artworks, sculptures and architectures, had close relationship with the Buddhist faith. They were mainly created as symbolic representations of the prosperity and continuity of Buddhism and Brahminism in the region. Dvaravati art was a mixture of indigenous art and the Indian-influenced art of the Amaravati,

Kupta and post-Kupta periods. The relationship that Dvaravati kingdom formed with its neighboring countries led to the assimilation of other styles of art such as the Javanese, Cham and preAngkorian Khmer art.

Part 2: History and architectural styles of Dvaravati period

Dvaravati kingdom had a population of different ethnic groups and its own form of civilization. It had accepted Buddhism since the 3rd Buddhist century onward. There were evidences of large religious structures whose traces remained to this day. The religious structures found on the grounds of the ancient city of Nakhon Pathom can be divided into the religious structures situated inside the city walls (Chulla Prathon Chedi), at the city center (Phra Prathon Chedi) and outside the city walls (Phra Meru Chedi, Phra Nuen Chedi and Phra Pathom Chedi). The ruins of the Sangha Ratanadhatu Chedi and Phra Ngam Chedi were only identified from their brick mounds. These ancient religious structures were initially built before the 11th Buddhist century with subsequent extensions or renovations at later dates. Religious structures of the 3rd and 16th Buddhist century, built during the transitional period of the Suwannabhum kingdom to the Dvaravati kingdom, were influenced by the Amaravati and Kupta art styles that were thriving in India from the 7th to the 13th Buddhist century. Bases of Phra Ngam Chedi, Phra Prathon Chedi, Chulla Prathon Chedi and Phra Meru Chedi show traces of numerous renovations and extensions that can be dated by their decorative stucco reliefs to belong to the Indian art designs of the 11th-12th Buddhist century. Stucco reliefs found around the

base of Chulla Prathon Chedi feature a Jataka story in the Theravada Buddhist tradition.

Chedi or pagodas are one of the most important Buddhist symbols that have highly sentimental value for Buddhists, especially for those who regard the three gems of Buddha, Dharma and Sangha as the most auspicious elements of the Buddhist faith. The Thai tradition of pagoda construction came from the Ceylonese (Sri Lankan) Buddhist tradition (Langkawong tradition) that was the origin of the Theravada or Hinayana Buddhism in Thailand. The majority of Dvaravati Buddhist pagodas was built in the Sanji architecture style favored by King Asoke the Great of India in the construction of places of worship. This became known as the Dvaravati architectural style which was prevalent in the area of Nakhon Pathom Province in the central region of Thailand. The ruins of Dvaravati pagodas of the 11th-16th Buddhist centuries, such as Phra Pathom Chedi and Phra Prathon Chedi, yield only partial evidences of their completed structure. There are only speculations that these structures were built in the Prasat-shaped pagoda style (with a Rueanthat body). The unique characteristics of Dvaravati pagodas are the Bua Walai base and indented corners (Yok Get). Pagodas of this period are usually identified by their decorative pagoda replica and reliefs with the distinctive Amaravati and Kupta, Southern Indian or Bengali and Central Javanese art styles. It was a popular practice for Dvaravati people to build a stupa or pagoda in dedication to Buddhism. The Puranatot-shaped stupa was preferred to signify fertility, which in this case referred to the fertility or prosperity of Buddhism.

Part 3: Musical relationship in the areas associated with the seven ancient Buddhist pagodas of Nakhon Pathom

Dvaravati music associated with the ancient Buddhist pagodas of Nakhon Pathom reflects the roles of music in religion. Music plays important roles in Buddhism as it is believed that the sounds of music can create deep faith, virtuous feelings and minds. Music also plays important role in worshipping and paying respect to the sacred.

The musical culture of Nakhon Pathom in the areas associated with the seven ancient Buddhist pagodas has close relationship with their communities and the people's lifestyles. However, these roles have almost disappeared nowadays, with an exception of the musical roles in the funeral rituals context. This exception exists because no other type of music can replace the performance of Piphat Mon and Piphat Thai ensembles on such occasions. Both types of ensembles have successfully adapted and perfected their music to meet the needs of community members. The significant impacts on the roles of Thai classical music ensembles, which were previously an integral part of people's life, come from the rapid

Key concepts for the creation of this composition

The following composition steps were taken:

1. Lyrical composition. The researcher used the Thai poetic forms of Khlong, Chan and Klon, together with data from historical sources, textbooks and relevant documents to compose the song lyrics that describe the origin of the Dvaravati culture and pagodas as well as the prosperity of Buddhism during that period.

2. Melodic composition. Based on the inspiration and imagination derived from the ancient Buddhist pagodas of Dvaravati period in the ancient city of Nakhon Pathom, the researcher composed new melodies for a suite of nine segments: the introduction segment (worshipping), seven segments describing each of the seven ancient Buddhist pagodas and the farewell segment (describing the existing prosperity). The researcher adopted the creative research concepts of applying an old composition style (the Khanob Phak Sopsamai style) to create new melodies (Buk Prai Berg Thang) and find an inspiration (Bundarn Rangsrat) for the composition of this suite (Pichit Chaiseri, 2014: 2-4). Considerations were given to the consistency of the melodies with the music moods, the art style of each pagodas and the unique characteristics of each musical instrument. Various rhythmic instruments were used in certain segments to create lively melodies and to convey the implicit meanings of the lyrics. Special performing techniques such as Keb, Kraw, Lueam, Look Lor Look Khat, etc. were used to create specific music moods and concrete performing styles. The distinctive identity of this composition was primarily expressed through its melodic styles, accents and the Song Chan (moderate) and Chan Diao (fast) tempos. The composition also adopted the composition principles of utilizing performing techniques, melodic forms, pitch levels (or Thang), rhythmic patterns and melodic patterns to communicate the mood of the repertoire.

3. Ensemble practice. The composition of the Buddha Chedi Dvaravati Sri Nakhon Pathom Suite relies mainly on the use of Thai musical instruments in the style of Khreung Sai Khruueang Khu

ensemble in combination with a special Thai musical ensemble, the Boran Khadi (Dvaravati) ensemble. Other musical instruments used are those found during the Dvaravati period, namely, stone bells and other rhythmic instruments as deemed suitable for the creation of lively music and for the expression of the historical and architectural implication of each pagoda. Different types of musical ensembles perform different segments of the repertoire to match the melodic style of each pagoda.

Recommendations

This article aims to study the history and development of a specific form of music and to gain knowledge on the social contexts involved. However, it did not focus on the relevant issues or details of any specific musical ensembles and their transmission style. A more comprehensive and in-depth study of these musical ensembles and related issues should be conducted to collect information and provide guideline for a music database and further research on the future trends of Thai music.

References

Arunrat, Udom. (1986). **Buddhist Music**. Nakhon Pathom: Silpakorn University Press.

Chaiseri, Pichit. (2014). **Thai Music Composition**. Bangkok: Chulalongkorn University Press.

Chomphunich, Nukul. (2008). **Dvaravati Sri Nakhon Pathom**. Nakhon Pathom: Petchakasem Publishing.

Khrueathongkhiew, Nuea-on. (2007). **Patterns and Beliefs Related to Phra Sri-Luksami Artifacts Found in Thailand Before the 19th Buddhist Century.** A master thesis in Art History, Silpakorn University.

Detwiriyakul, Sunirat. (2005). **Dvaravati Stone Bells: Hypotheses and Usages.** A master thesis in Archaeology; Faculty of Archaeology, Silpakorn University.

Fine Arts Department. (1999). **Phra Pathom Chedi National Museum.** Bangkok: Fine Arts Department.

Saraya, Thida. (1995). **(Sri) Dvaravati: The Early Historical Period of Siam.** Bangkok: Darnsutha Publishing.

Supatradis Diskul, M.C. Digital Library. (2001). **Pictorial database, lists of slides on India.** Retrieved form <http://www.thapra.lib.su.ac.th>

Thai Khadi Research Institute. (2009). **The Stories of Masterpiece Musical Instruments.** Bangkok: Rungsilp Publishing.

Wongdes, Sujit. (2008). **Rong Rum Tham Pleng: Siamese Music and Dance.** Bangkok: Pitkhanesh Printing House.

Yupho, Thanit. (1980). **Thai Musical Instruments and Tales of the ComBining of Mahori, Piphat and Khrueang Sai Ensembles.** Bangkok: Karn Satsana Printing House.