

Chapter 1 Introduction

Rationale and Significance of the Problem

Thailand has been prosperous in terms of culture since ancient time in each of its aspects, namely, handicraft, home economics, customs, tradition, and plays. One aspect of culture which has reflected the national cultural prosperity is literature. Praphasri Siha-Umphai (2534, pages 1 – 3) has noted that culture as classified by the Office of the National Commission of Culture had 5 fields – humanities, arts, handicraft, home economics, and sports and recreation. Literature was classified in the arts category – a language competence of Thai people in expressing their knowledge and feeling through the letters to entertain and provide learning substances to the readers helping them imagine along the literal creation. (Praphasri Siha-Umphai, 1991, page 27). Literature had two societal values: (1) emotional values – creating enjoyment through language aesthetics, and (2) intellectual values – providing knowledge in various fields without intention on the part of the poet (Ruenruethai Suddjaphan, 1983, pages 2 – 3; Sukhothai Thammathirat Open University, 1983, pages 164 – 191).

The term “literature” is used to refer to the poetic works. In those days, books were written in poetic form (Ruenruethai Suddjaphan, 1983, page 4). One of the widely known poets was *Sunthorn-Phu* who had lived between 1786 and 1855 during the Reign of Kings Rama the 1st to the 4th of Ratanakosin Era. His old name was Phu who had served in the royal court during the Reign of King Rama the 2nd and had been entitled Khun Sunthorn Phu during King Rama the 4th. He was very keen in poetry and had created many famous poetic pieces. *Sunthorn-Phu* died at the age of seventy. Among his famous works was *Phra Abhaimani* (Thai Wax Museum, 1999, pages 4 – 5). By virtue of his works, *Sunthorn-Phu* had been regarded the king of *Klon Paed*, a Thai lyric style with eight-word phrases. He has also been accepted as the poet who had wide imagination in setting up the plot and content of the verse tales he was to write making them interesting and worth following (Cholada Ruengraklikhit, 2005, page 1). Consequently, with the National Office of Culture Commission’s recommendation, the UNESCO had declared him an great poet of Thailand and of the world in 1984 (Pha-ob Pasakissana, 1986, Preface; Cholada Ruengraklikhit, 2005, pages 1).

One of the great works of *Sunthorn-Phu* was the *Phra Abhaimani* Thai folk verse tale which was created in about 1821. The main story was about the adventurous travel of the prime actor -*Phra Abhaimani* and other characters (Banthao Kittisak, 1986, page 206). It was a fantasy story concerning the king and court but *Sunthorn-Phu* had made it different from the typical king and court stories by creating the prime actor not as a great warlord but an artist. The plot had made use of other literatures as well as real stories and personal accounts of Poet *Sunthorn-Phu* himself resulting a well harmonious verse tale (Banthao Kittisak, 1986, page 206). He used his literal competence to insert his wisdoms, imagination, and creativity in his stories which have enjoyed popularity among Thai up to the present.

The popularity of *Phra Abhaimani* had not limited only to Thailand but also other kingdoms surrounding Ratanakosin. Khmer, for example, had translated it into

Khmer. Lanna Kingdom had used the stories in this poetic work for their *khawsaw* – a folk singing of the region by Paya Phom Wiharn. In the South, at Muang Nakorn, or the Nakorn Srithammarat, there was a discover of written version of *Phra Abhaimani* (Santi Pakdeekham, 2007, pages 97 – 101). These had shown the wide spread of popularity of this poetic work and the recognition of *Sunthorn-Phu* great talent.

Besides its outstanding on melodiousness, *Phra Abhaimani* had characters which differed greatly from those in other Thai folk verse tales. *Phra Abhaimani*, the prime character of the tale had utilized his talent in wood wind play to solve the problems. This had reflected the mode of thinking of *Sunthorn-Phu* who had wanted to point out that any knowledge could be valuable if one truly had expertise on it (Nithi Eawsriwong, 2002, page 67). Some characters were created with a deep imagination such Sinsamut and Sutsakorn who were born from two different species of living things reflecting his foreseeing into the now emerging issue of genetic engineering. Virtually, such characters had made his story innovative and interesting. Moreover, *Sunthorn-Phu* had incorporated the legends and current situation of the time into his story in well integrated way such as the story of trading using big sail boat or *Samphao*, the sailing innovation at the time (Nithi Eawsriwong, 2002, page 2). This had made *Phra Abhaimani* lively rather just another imaginative story.

Another explanation why *Phra Abhaimani* had high level of literary values was that in this work *Sunthorn-Phu* had based his story on particular facts such as those in geography. This made his work stand out of other works of the same period. It had been speculated that the geographic reference of the story could have been that of Andaman sea bank up to Sri Lanka island as hypothesized by Ganjanakhapan (Ganjanakhapan, 1999, pages 19 – 20; Suchit Wongthed, 1994, page 142).

Besides, in *Phra Abhaimani*, *Sunthorn-Phu* had pointed out about the strategy to do things. *Phra Abhaimani* had been taught by his wood wind master to use the music to win over people's heart. This instruction implied that human beings were attached with form, taste, smell, and touch. It also had implication for other social function such as ruling. In ruling people, the strategy used by *Phra Abhaimani* suggested that it was not always effective to use hard method but the soft one. The latter required intellectual rather than physical strengths.

One instance of well-roundedness of *Sunthorn-Phu* could be seen from his scientific and technological imagination in certain episode such as at about the time *Phra Abhaimani* was playing the wood wind to kill the giant woman, a god had came out to stop him from burning out the giant body as he had intended to do to prevent her from coming back to life and to chase up the humans for food. At this point, *Sunthorn-Phu* had mentioned the four basic elements – a principle on which people held to lead their life. The four elements included earth, water, wind, and fire. This principle was influenced by the Buddhism which was the world view of the East (Fritjof Capra, 1989). According to *Sunthorn-Phu*, these four basic elements were ingredients of all things. Earth signified solidity, expansion, and hardness. Water implied the sense of being bathed over with cool and fresh water. Win signified the flexibility. Fire was something hot and burns (Olan Phiantham, 2006, pages 144 – 146). The basic elements now had become basic content in modern chemistry. This has shown how knowledge has been transformed from philosophical thought to modern science. It was *Sunthorn-Phu* who bought it up in this literary work.

Moreover, many instruments mentioned in the story were created with a superb scientific and technological imagination of *Sunthorn-Phu*. The pirates' boat which was much larger than *Sumphao*-a big sailing boat at that time, *Nang Laweng's* accordion which played music by itself, and the engine boat of *Phram Mora* – an amphibious vehicle, were the innovative inventions by this great poet. Some characters such as *Sin Samut* or *Sutsakorn* was son of the parents who were of different species – human and giant, and, human and mermaid, respectively. The cross breeding was perhaps a very fundamental form of the present theory of genetic modification.

These examples of *Sunthorn-Phu's* imagination obviously made him a unique poet who had a far reaching vision. In science, there is a term – scenario which is the situation in which things happen. In a way, *Sunthorn-Phu* had generated a science or technology scenario of the days (Chaiwat Kupratakoon, 1997, page 64; Nattapong Chareonpit, 1996, page 179). Though literature had emerged before science, science's substance had often been found in literature. The writer might not have put it in scientific term per se but its essence was of science (Chaiwat Kupratakoon, 1985, page 7). Human imagination has always crucial for the progress of science and technology as pointed out by the world's great scientist Albert Einstein who stated that "Imagination is more important than knowledge." He disclosed that the knowledge he himself had discovered was originated in form of imagination before turning out to be various kinds of formulas and equations (Som Sujeera, 2008, page 121). All these confirm that imagination is important to science's knowledge.

From examining the literatures on *Phra Abhaimani*, it was found that there had been the many points made on both the work and the creator. It was found that the locations used in the story had their trace in modern geography (Ganjanakhapan, 1999; Suchit Wongthed, 1994). There were some analyses of the economic, political, and cultural contexts of the early Ratanakosin period in the content of *Phra Abhaimani* (Nithi Eawsriwong, 2002). There was a work on the investigation of morality in *Sunthorn-Phu* and of *Phra Abhaimani* (Somsak Rienthong, 1986), and on science and scientific imagination of *Sunthorn-Phu* in *Phra Abhaimani* (Somchai Pumsa-ard, 1986; Prajak Prpapittayakorn, 1986). Some of these works analyzed *Phra Abhaimani* from cultural perspective. The analysis of this literature from scientific perspective has been found but was quite a few in number and mostly at fundamental level. They have not directly analyzed the knowledge and principles of science embedded in it.

The analysis on the knowledge and scientific and technological imaginations in the verse tale *Phra Abhaimani* could be crucial in showing the talent and well-roundedness of its author - *Sunthorn-Phu*. Some of the knowledge could still be useful in the present days' life such as the knowledge on sea breeze and land breeze by which the sailors still use in their sailing at the present. This type of analyses should be useful as well for learning provision in science strand or any other form of integrated substances all of which should encourage the students to realize the values of Thai literature and to have pride in their being Thai. These educational objectives were set by the 1999 National Education Act, on Articles 7 and 23 which specifically suggested the insert of Thai culture into other learning substances so that the students should understand, appreciate, and realize in their being Thai. The students should also be able to see the implication of Thai literature in other modern pieces of knowledge.

From all these reasons, the researcher has developed his interest in studying the knowledge and imagination in science and technology embedded in the verse tale “*Phra Abhaimani*” to be used in the learning and teaching of science strand or any other integrated curriculum in which science could be part. The analysis included the relevancy of the knowledge in science and technology appeared in *Phra Abhaimani* and the learning standards in science strand covering 8 learning contents: (1) living things and life maintaining process, (2) life and the environment, (3) substances and their properties, (4) force and motion, (5) energy, (6) earth surface change process, (7) astronomy and space, and (8) nature of science and technology. All these derived subject matters should implant knowledge, concept and imagination on science and technology onto the Thai youths. The discovered substances should also be used for designing the instruction which integrate science into society and culture. Other consequence is the awareness that literature could serve as the space in which major bodies of knowledge – natural science, humanities, and social sciences could be integrated for the educative purposes. Another consequence is the realization that literature could serve as the source for studying about Thailand during the period in which the work was created in various aspects including science and technology.

Research Objectives

This research was aimed at:

1. Studying the body of knowledge and imagination on science and technology embedded in the verse tale *Phra Abhaimani*.
2. Managing knowledge on science and technology as appeared in the verse tale *Phra Abhaimani* into a classification system to be used in providing learning in science for every grade in the scope of 2001 Basic Education Curriculum.

Scope of the Research

In this research, the researcher had set up the scopes for the research conduction each of which is as follows:

1. Scope on Content

This research was going to analyze the body of knowledge and imagination on science and technology of *Sunthorn-Phu* as appeared in the verse tale *Phra Abhaimani* which could be accounted for by science and technology basing on science knowledge in fields, namely, physics, chemistry, astronomy, geography, geology, and biology. The study was also to examine the issues in science strand of every grade as prescribed by 2001 Basic Education Curriculum.

2. Scope on the Data Sources

This research was to study the body of knowledge and imagination on science and technology in the following documentary sources:

2.1 The version of verse tale *Phra Abhaimani* which was created by *Sunthorn-Phu* was published by Silapakarn Press, in 2001, composing 4 volumes. The researcher chose the version of the literature which had been published for 17 editions the 2001 of which was the latest one. This version has all 132 episodes in the content. The wordings in the published version had been evaluated to have followed those originated by *Sunthorn-Phu* by the experts who had been widely accepted in the literature circle invited by the publisher who had got the permission to distribute the

literature work among the students, and others interested in literature from the Department of Fine Arts.

2.2 Other documents and literatures related to *Phra Abhaimani* and *Sunthorn-Phu*.

2.3 Literature related to science strand as prescribed by the 2001 Basic Education Curriculum whose subject matters were classified in the table designed by the researcher as the database to guide the use of knowledge and imagination on science and technology as appeared in the verse tale *Phra Abhaimani* for the purpose of learning provision in science strand or other integrated materials in which science had a part.

3. Scope on Time

Time used in this research was divided into 3 phases:

Phase 1: This phase was to survey and compile pieces of knowledge and imagination on science and technology appeared in the verse tale *Phra Abhaimani*.

Phase 2: It was the phase to analyze the knowledge and imagination on science and technology compiled in phase 1 and classified it into 6 fields -physics, chemistry, astronomy, geography, geology, and biology with some description and explanation basing on the relevant field of these.

Phase 3: This phase was to survey and analyze the content of science strand as prescribed by the 1999 Education Act to set up the table on which science-related data derived through the analysis of *Phra Abhaimani* were to be filled in to be used for the learning and teaching of science strand or any other integrated materials in which science was a part.

Operational Definition

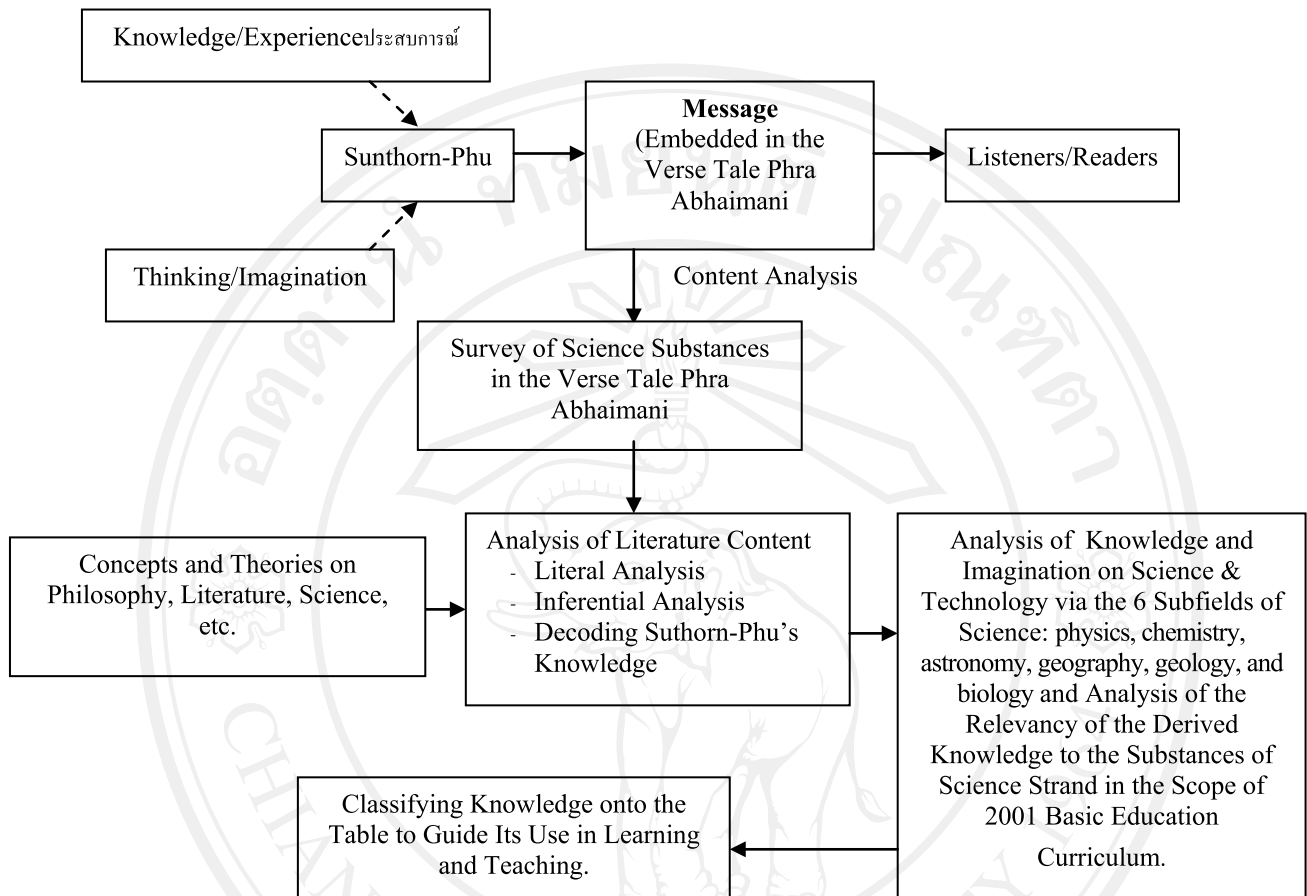
In this research, the researcher had defined the terms used as follows:

Body of knowledge in science and technology is referred to the knowledge that accounts for the natural phenomena in a valid and reliable ways from which people could explain it basing on the subfields science - physics, chemistry, astronomy, geography, geology, and biology, and could apply it in their everyday life.

Imagination on science and technology means the thought which was represented by language and symbols used by *Sunthorn-Phu* used to transmit knowledge and concepts regarding the reality in nature as well as the experience, social situation, and artifacts existed at the time of the literature creation but its scientific principles and application were not realized at the time. The imagination could be directly expressed or indirectly done through analogy or symbolization so that the readers could feel the images and maintain enthusiastic feeling during their reading of the literature. Such symbolic expression could be decoded basing on the reality or vision of the science and technology both at the time and the foreseen future.

The verse tale Phra Abhaimani is referred to the verse tale titling *Phra Abhaimani* composed by *Sunthorn-Phu* and later verified by Prince Damrong Rajanupab published as the 16th edition by Silapakarn Press in 2001 consisting 4 volumes.

Research Conceptual Framework



Expected Outcomes

The research is expected to yield the following outcomes:

1. Knowledge on knowledge and imagination on science and technology embedded in the verse tale *Phra Abhaimani* which could be accounted by knowledge and principles of modern science.

2. Database for guiding the use of knowledge and imagination on science and technology from the verse tale *Phra Abhaimani* in designing learning and teaching related to science in the form integrated by science, social sciences, and culture.

3. New perspective on the study of Thai literature in terms of science basing on the interpretation of words and symbols used in literature to analyze its linkage with body of knowledge on science and technology.

4. The guidelines for linking knowledge between literature which is a field in humanities to that of natural science to be used for providing learning in interdisciplinary manner aiming at equipping the learners with integrated knowledge as well as the realization of the balance between logical knowledge of science and aesthetics of literature.