

Searching for the Curriculum of Sriwijaya¹

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It is well-known that students sailed from distant places across the Indian Ocean and the South China Sea to study in Sriwijaya during its heyday. However, what kinds of sciences were taught in Sriwijaya? What kind of curriculum was used? What was its education system like? Answers to these questions will form the foundation for constructing an Indonesian history of science.

Sriwijaya-Nalanda

The history of science in Indonesia, and Southeast Asia in general, in the period prior to the arrival of Europeans has not been adequately studied. Thus, pre-colonial Southeast Asian societies are regarded as “underdeveloped”. This unfortunate image is not confined to Southeast Asia. Even the understanding of the history of science in the ancient centre of learning in Nalanda (Rajgir, India) is limited.

The most complete record on academic life in Nalanda and Sriwijaya was written by Chinese scholar Yijing (or I Ching), around 1300 years ago. This Buddhist monk had fortunately studied in the two nodes of the knowledge network in the Asian golden age. Efforts in tracing the “Knowledge Route” as a part of the flow of knowledge, rather than the Silk Road as a network of trade in goods, was expounded in the article *Contemplating the Knowledge Route* (Pranoto, 2016).

According to Yijing, the curriculum and the depth of learning in Nalanda and Sriwijaya were not much different. Hence, he argued that rather than going to Nalanda, students could learn in Sriwijaya. Moreover, he believed that studies in Nalanda would not be complete if one did not also study in Sriwijaya.

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Based on these facts, one possible method of establishing a record of an Indonesian history of science is to examine the system of education in Nalanda. By tracing the development of science in Nalanda, we can arrive at a better understanding of its development in Sriwijaya. From there, we can begin to uncover the civilisation of science in these equatorial islands.

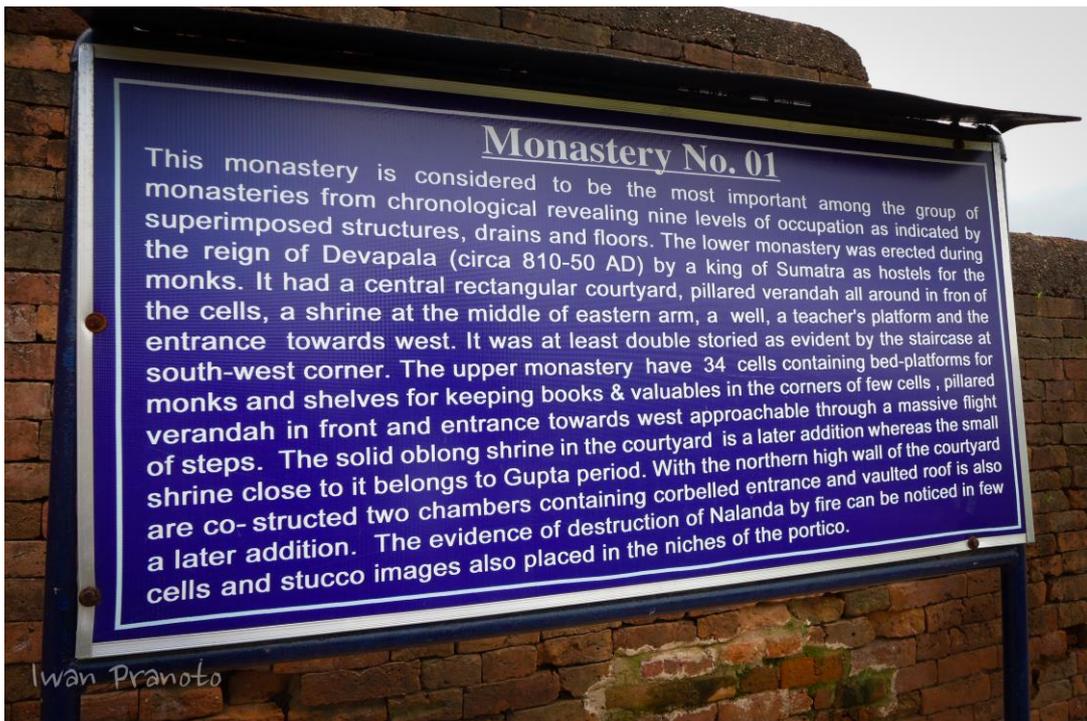
In its heyday Nalanda("giving out liberally" in Sanskrit) did not only teach theology. It also taught subjects such as mathematics, logic, language, art, astronomy, and medicine. Not only was Eastern philosophy taught there but Greek philosophy as well.

The uniqueness of Nalanda laid in its openness to foreign ideas. At its height it was an oasis for various civilisations to meet, and where a great number of different ideas were exchanged. Moreover, the students of Nalanda were known for their passion for spreading knowledge to the world.

The ancient Nalanda's academic structure was similar to a modern university in the British system where the university comprised colleges or "monasteries", as referred to by Nalanda historians. Angraj Chaudhary wrote about the Nalanda academic system in *The Heritage of Nalanda* (Mani, 2008, pp. 202-205).

There were 11 colleges in ancient Nalanda with each having its own quarters for students and lecturers who accompanied the students daily. It can be inferred that education in Nalanda (and perhaps also in Sriwijaya) nurtured each student holistically. In Europe, such an education model is popularly referred to as a liberal arts education. Under this system, students at ancient Nalanda expanded their horizons by studying the natural sciences, improved their academic skills by practicing rhetoric and writing, nurtured their bodies through yoga, and enlightened their souls through meditation and contemplation of the books of wisdom.

The operation of ancient Nalanda, with ten thousand students and two thousand teachers, was based on public support. The surrounding villages devoted food cultivation to the support of Nalanda by donated surpluses from their farms so that students and teachers could focus on learning and teaching. This is why there are storage rooms at the large kitchen at the site.



The actual corridor of student rooms in Monastery No. 01 and explanatory panel (photo Iwan Pranoto).

One important fact to highlight is the largest college, labeled 'Monastery No. 01'. This college on the left of the entrance gate was a donation from King Balaputradewa of the Shailendra dynasty in Suwarnadwipa (Sumatra) or Sriwijaya. This is perhaps the first act of

diplomacy performed by our ancestors, and is well recorded in the Nalanda Inscription.

The Achievement of Sciences

If education in Sumatra was as advanced as reported by Yijing, then why has textual evidence on its achievements not been found? According to an expert on old Javanese and Balinese lontar manuscripts from Nalanda University and the Nalanda-Sriwijaya Centre, Dr. Andrea Acri, there are several possibilities.

One possibility is that proofs of this achievement were not found in manuscripts. Instead, the evidence is perhaps contained in other forms of tangible and intangible heritage, such as in temples or preserved as ideas expressed through art and religion. So, in order to understand such records, one must inevitably interpret them through existing heritage or heritage to be uncovered in the future.

One other explanation for the lack of documentary evidence is that the fact that ancient manuscripts from Lombok to Sumatra were made from Lontar leaves (Siwalan, in East Java). In West Java, they were made from Gebang or Nipah leaves. Considering the fragility of the material, the humid climate of the tropics, combined with the challenge of having to routinely apply Citronella oil as a means of preserving the material, it is understandable that only few ancient manuscripts remain today.

Interestingly, the Indian Nobel Laureate Prof. Amartya Sen has provided another perspective. He stated that the writing tradition of Chinese scholars, especially in the 7th and 8th centuries, was second to none. Yijing, particularly, recorded the experience of learning in Nalanda (and also in Sriwijaya) in detail. This fact explains why the number of historical records from Sumatra to Lombok written by our ancestors are relatively small, compared to the Chinese manuscripts.

The relatively more complete records by Chinese scholars may give the impression that the Chinese absorbed knowledge from India, but not the other way round. One may similarly conclude that Chinese scholars learned many things from Sumatra, not the other way round. However, with a shared spirit for the quest of knowledge amongst East Asian societies in that era, from the Ganges to the Mekong River to the Batanghari River, it is more likely that the

exchange of knowledge happened on a reciprocal basis, in all directions.

Another possibility worth studying of course, is the intentional destruction of the records. This possibility, however small, cannot be dismissed.

Now, in spite of the lack of written records on the history of ancient knowledge, many experts believe that the sciences, which developed in the archipelago from Lombok to Sumatra, were very sophisticated for their time.

The grand temple of Borobudur with its magnificent dimensions is an excellent example. This temple incorporates great complexity in its construction and at the same time is connected to the positions of the celestial bodies. Therefore, Dr. Acri argues that the people who designed it possessed a strong mathematics and natural science background. Thus, it is a challenge for historians to uncover the scientific knowledge encoded in various tangible and intangible heritages.

Following that, the fact that Java, Bali, and some parts of Sumatra are located south of the equatorial line is unique and second to none in Asia. This uniqueness further challenged our ancestors to invent special and complex techniques in astronomy. Their development of science could not depend merely on copying astronomical science at that time because it was specific to the Northern Hemisphere. Therefore, the development of astronomy together with its supporting sciences in these islands at that time should have been very advanced.

Asian Renaissance

The present day effort to search for the curriculum of Sriwijaya through Yijing's records is timely. Not only because the age of Asian Renaissance has arrived, but also because the collaborative relation found in the Asian civilisation of science could once again rekindle the desire for the harmony of borderless societies within Asia. The former Foreign Minister of Singapore and now the Chancellor of the Nalanda University, Mr. George Yeo, emphasised this great value of

the new Nalanda University at its first graduation ceremony on 27 August 2016.

The borderless worldview of the students of Sriwijaya and a culture that prioritises the search for knowledge would help eliminate mutual suspicion. This would be useful for improving diplomatic ties across the Indian Ocean and in the South China Sea today. While current international relations focuses mostly on defense and economic issues, there is a need to ensure that knowledge development across countries is promoted as well.

The new Nalanda University has been re-incarnated near its original site since 2014. This reincarnation was initiated by foreign ministers attending the East Asia Summit in 2007. In Singapore, Nalanda-Sriwijaya Centre (NSC) was also established as early as 2009. While one would encourage Indonesian students and scholars alike to collaborate with the Nalanda University and NSC, it would make sense if an international Sriwijaya Centre or even an internationally-scaled university was established at Muaro Jambi or Palembang. These institutions will facilitate studies on the history of science in our ancient civilisations as well as cultural links between the Indian subcontinent and Southeast Asia.