

Integrating Science, Technology and Religion – A Universiti Teknologi Malaysia Perspective

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Abstract

It is said, as commonly accepted until now, that religion and science are two entities that cannot be integrated. Simply understood, religion produces “religious sciences” on the one hand, while science produces “secular sciences” on the other. In the classical period of Islamic civilization, there was no separation in mastering of religion and science. To be a religious man is to be a scientist at the same time as Ibnu Sina, al-Farabi, and many Muslim scholars of the golden age of Islam proved. Based on this consideration, integration of science, technology and religion can be done by taking the fundamental of Islamic philosophy as future science paradigm. It is in this spirit that Universiti Teknologi Malaysia (UTM) was established in 1975 with its philosophy: “The divine law of Allah is the foundation for science and technology. UTM strives with total and unified efforts to attain excellence in science and technology for universal peace and prosperity in accordance with His will”. The implementation of the integration between science, technology and religion can be divided into four levels: conceptual, institutional, operational and architectural. At architectural level, the implementation between science, technology and religion at Universiti Teknologi Malaysia is translated with the existence of a beautiful mosque in the center of the university as a center of society, culture and believe.

Introduction

Islam is full of praise for knowledge and the learned. The prophet Muhammad (peace be upon him) once said: “the acquisition of knowledge is incumbent on every Muslim”, and “seek knowledge even it is in China”. Even the Qur’an places the faithful persons and the learned in the same level: “Allah will raise up to (suitable) ranks (and degrees) those of you who believe and who have been granted Knowledge...”(58: 11).

The word “ilm” and its derivatives are frequently used in the Qur’an. It means “knowledge” in its general sense, including the sciences of nature and humanities. It also includes both revealed and acquired knowledge. Hence, seeking knowledge is a religious quest in the Islamic perspective. Believed or not, in the Islamic worlds including Malaysia, sciences were divided into religious and secular sciences.

In the classical period of Islamic civilization, there was no separation in mastering of religion and science. To be a religious man is to be a scientist at the same time as Ibnu Sina, al-Farabi, and many Muslim scholars of the golden age of Islam proved. Based on this consideration, integration of science, technology and religion can be done by taking the fundamental of Islamic philosophy as future science paradigm. It is in this spirit that UTM established in 1975 with its philosophy: “*The divine law of Allah is the foundation for science and technology. UTM strives with total and unified efforts to attain excellence in science and technology for universal peace and prosperity in accordance with His will*”. Although the above philosophy is clear that there is integration between science, technology and religion in UTM, however, there are some questions should be proposed. What kind of sciences in the golden age of Islamic civilization? Is it true they were “integrated” or it is only an idealization? If they were integrated, how were their forms? Why later the decline happened for centuries up to our age that urges to reintegrate them? Is it still possible for us (Muslims) after the long history of science dominated by Europeans and Americans to go back to ideal form as in the past? Of course, it is not easy to answer these questions, and this paper just describes the thoughts dealing with the concept of integrating science, technology and religion from perspective of UTM. Even though there is not yet a blue print describing the form of (re)integration of religion (Islam) and science, UTM is still searching an ideal model.

Universiti Teknologi Malaysia

Universiti Teknologi Malaysia is a public university in Malaysia and is widely known by the abbreviation UTM. UTM etched its history and standing amongst the nation's premier institutions of higher learning since the proclamation of its establishment on April 1, 1975. The concept of forming a technical institution was neither planned thoroughly nor executed during the colonial Malay States; the development of the institution, however, was significantly intertwined with the economic growth of the Malay Peninsula.

The main campus is in Skudai, which is the first university located in the state of Johor. It has an area of 12.22 km², while the branch campus in Kuala Lumpur has an area of 0.18 km². The university mainly specializes in technical studies, with separate faculties for Education, Pure Sciences as well as Management and Human Resources Development. The main campus in Skudai is located approximately 20 km to the north of the state capital city of Johor Bahru.

Models of integration between science, technology and religion

The relation between paradigms as the basis philosophy of the structure of modern science can be analogized as cloud resides at top of the structure of pyramid science as presented in Diagram 1 which defining science as link between human and nature. The object of science is nature, and the subject of science is human. The body of science is the rational theoretical knowledge (mathematical theory) and the foot is experimental knowledge. Its arms are two scientific methods, namely mathematics/logic (deductive) and statistics (inductive).

So, science is way of thinking in which the knowledge of nature is the basis and the theoretical knowledge is the structure, while paradigm is superstructure above or outside of science. This viewpoint is based on materialism perspective that assumed matter as single reality. One considers that science is the representation of nature in human mind, where this is only one aspects of human brain.

The above opinion is different from Islamic opinion on science. There is soul as a substance having the character of immaterial in human. Nature is manifestation of God creativity which

of course formed based on His Science. Different from modern science which assumed nature is the basis of reality, the Islamic science see apocalypse of God as the basis of the reality. Because of that we have pyramid of science with reverse structure compared to those of pyramid structure of modern science as shown in Diagram 2.

From the above diagram, we can see that the orientation of Islamic science does not only reverse from modern science which developed in West, but also divide into more stratification in its science structure. Paradigm of science is expressed explicitly and built based on apocalypse of Allah which is written in holy book Al-Quran Al-Karim.

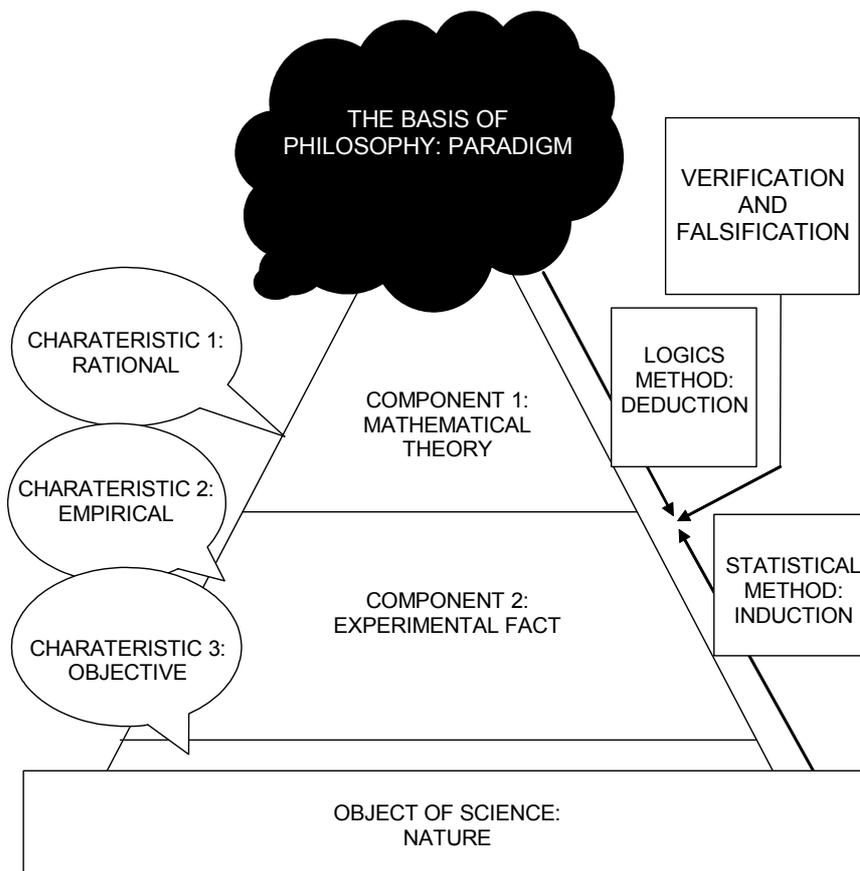


Diagram 1. Structure of modern science.

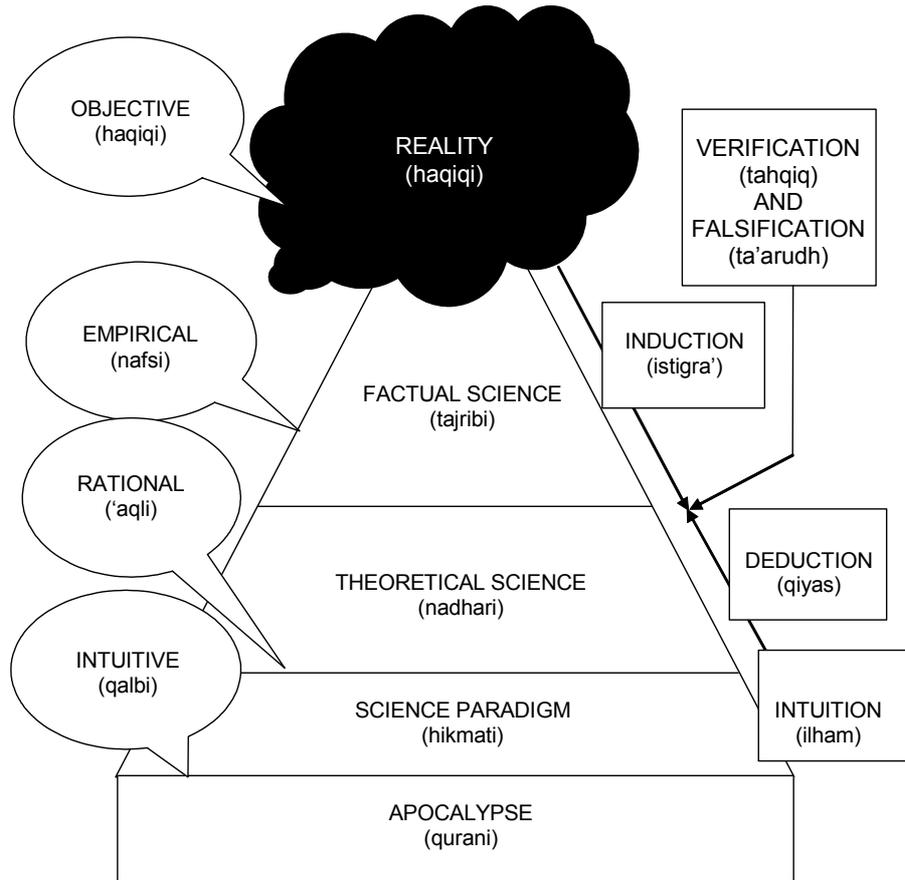


Diagram 2. Structure of science from Islamic point of view.

As shown in Diagram 2, we also see that Islamic science doesn't have the character of empirical rational, but it has the character of religious intuitive. In Islam we understand that the integrity of individual human from body to soul through *nafs*, *'aql*, and *qalb* which are corresponded to empiricity, rationality, and intuitivity of Islamic science. All of the characteristics are in complement to religiosity and objectivity of science. On that account, Islam is not only recognizing humanity sciences and natural sciences, but also theology in which its philosophy is paradigm for both former mentioned sciences.

Integration in the level of conceptual

It is not the time to maintain the system developed as in UTM with only focusing on science and technology and ignoring other sciences: social and natural sciences. One can explain

that an appropriate perspective with the Islamic spirit, namely an integrated and holistic science. With this perspective epistemologically there is no separation of religious sciences and secular sciences, there is no dichotomy or dualism, the only exists is categories. Sciences are divided into three categories: natural, humanities, and social sciences. From Islamic spirit, before a researcher goes to laboratory, he/she reads first how the Qur'an and the Hadith told that problem. In fact, the Qur'an globally tells the creation of human being that needs to be continued in laboratory to find its detail problems. But, it is realized that the Qur'an is not a book of science, it is a guidance book for the believers. The Qur'an gave the general signals, and scientists later explore those signals.

Science that comes from religion becomes objective science (experiencing the objectification process). In this sense, such a science is not felt by other religious followers or even by anti-religion group as a norm, but as an objective-scientific phenomenon. Science that comes from a religious person is for all human beings, not only exclusively for those religious persons, or especially for certain religious followers. Thus, following this idea, hence I agree in this case, that there is no "Islamic sciences". All objectificated sciences that released from its original religion are for all. Here are the examples: shari'a banking with profit sharing system is able to be implemented by whoever without belief in Islamic ethics on economy, mechanic and astrophysics can be learnt without dealing them with Judeo-Christian tradition, etc.

From conceptual point of view, it is formulated that: Education is part to form a muslim's *kaffah*; Scientific research can be viewed as part of increasing of quality of *tawhid* of human as *khalifah* of Allah on the earth, and; Public service is part of religious service.

Integration at the institutional level

Aside from the engineering and technical courses offered by the main faculties, UTM also paid due attention to the social sciences. For that reason, since 1975 the Centre for Humanities Studies was set up, comprising of Islamic studies, Language Studies, Malaysian Studies, Education, and Social Sciences Units. The main objective to establish these courses was to instill and inculcate characteristics inherent in the development of responsible citizens

and highly educated individuals, It was also aimed at developing students with refined characters, and for the muslim in particular, a complete submission to the will of Allah.

In the spirit of Ibnu Sina, a Muslim scholar where also a scientist at the same time, Ibnu Sina Institute for Fundamental Science Studies (IIS), Universiti Teknologi Malaysia, the first institute of its kind in the country, was established in 1997 to stand at the forefront of the university's aspiration of being a research university by the year 2010. IIS is a vital segment that seeks to comprehend the most fundamental knowledge towards achieving our goal.

IIS emphasizes on frontier science research activities; directly applying basic knowledge of physics, chemistry and biology with mathematics to facilitate the advancement of local technology, engineering and material discoveries; in pursuit of fundamental scientific advances through interdisciplinary programs and collaborations.

Integration at the operational level

Although UTM still not yet integrate science, technology with religion at the operational level, ideally, some aspects can be proposed for the integration in order to see how religion and science are integrated practically. Compared to curricula prevailed in UTM today, so far, subject of religion is only 2 credits for 8 semesters. While in the context of integration of science and religion, all basic of Islamic studies e.g. Arabic, Fiqh, Qur'an, Hadith, etc must be thought in more credit. In addition, operationally, teaching and co-curriculum activities schedule may not be against the schedule of ritual Islam, such as *shalat*, *Id ul-Fitr*, etc. Scientific researches have to follow the fundamental value of *aqidah* and Islamic law. As mentioned above this curricula are hoped that university can produce a religious scientist and scientific pious person at the same time. Of course, this concept of integration is a new effort and time will prove whether this concept succeeds or not to bring back of Islamic civilization in the future.



Figure 1. The building of Ibnu Sina Institute for Fundamental Science Studies.

Integration at the architectural level

At architectural level, integration in between Islam and science is implemented by to have mosque as center for society, cultured, and believe. Every department must have prayer room. Library must cover all books in natural sciences, humanities, and religion. All of these are built to motivate *civitas academica* in looking for, disseminate, and exploit science for the benefit of all mankind. This concept is translated by UTM with the existence of a beautiful mosque in the center of the university as a center of society, culture and believe.

Planning of the Skudai campus of UTM was based on the concept of centralizing the main activities of common interests around the mosque which is surrounded by other buildings within walking distance (see Figure 2). This concept is in line with the university motto, "For God and Mankind".

Activities of common interest are the buildings of the Sultanah Zanariah Library, the Sultan Iskandar Hall, the Administration Building and the Student Union Building. These common-

interest buildings are themselves surrounded by buildings of the various faculties which are known as the Academic Centre.



Figure 2. Knowledge circle concept in the development of campus of UTM with mosque in the center.

Construction of the Sultan Ismail Mosque began in 1986. It was completed in 1990. The mosque is sited right at the centre of the campus and is the most outstanding building of the university in terms of its commanding view and its location on high ground. This makes the mosque the central focus in the planning of the construction of the campus. Its location at the centre of the campus is in line with the concept of Islamic learning in which the mosque is the source for the acquisition and dissemination of knowledge.

REFERENCES

1. Ismail Yahya, "Integration of Religion and Science in the Indonesian State Islamic Universities", Paper prepared for "Science and Religion: Global Perspectives", June 4-8, 2005, in Philadelphia, PA, USA, a program of the Metanexus Institute.
2. Armahedi Mahzar, "Integrasi Sains dan Agama: Model dan Metodologi", in Integrasi Ilmu dan Agama: Interpretasi dan Aksi, Zainal Abidin Bagir *et al.* (Eds), Penerbit Mizan, 2005.
3. "Seabad Meniti Cabaran Menjana Peradaban Terbilang: 100 Tahun Sejarah UTM (1904-2004)", Penerbit Universiti Teknologi Malaysia, 2005.