UHIT2302-18 PEMIKIRAN SAINS DAN TEKNOLOGI (SCIENCE AND TECHNOLOGY THINKING)

Webinar Review

Philosophers

GROUP -5

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Contents

A. Webinar Title, Speaker, Time, Place, Period

- <u>Webinar Title:</u>

WEBMINAR FORUM OF SCIENCE AND TECHNOLOGY THINKING PARADIGM

- <u>Speaker:</u>

a) PROF. DATO' IR. DR. MOHAMMED RAFIQ BIN DATO' ABDUL KADIR

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b) PROF. MADYA DR. AMINUDDIN RUSKAM

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Universitas Islam Raden

Rahmat (UNIRA) Malang

e) DR. ZILAL SAARI

Pensyarah Kanan Akademi Tamadun Islam, FSSK

- <u>Time and Date:</u> 12 January 2021 (Tuesday)
- <u>Place:</u> FB Live FSSH
- <u>Period:</u>

Session 1: FORUM

Time: 9.00-11.15 am

Language: Bahasa Melayu

Session 2: KEYNOTE SPEECH

Time: 11.30am-12.30pm

Language: English

B. Objective Webinar.

Along with the development of human knowledge, there is a paradigm shift in science and technology (S&T) thinking. The latest discoveries, theories, ideas, inventions and research change the pattern of the S&T-based education system. The role of religion in driving the development of S&T is also very important. The webinar objective is to discusses the paradigm of S&T thinking from a scientific and religious perspective. Meet leading academics, scholars, and researchers to share new knowledge and ideas as well as discuss current developments in their respective fields of expertise.

C. Major Components

Session 1

- Meaning of paradigm
- Process of seeking knowledge
- Student attributes
- Science and Technology perspective Islam
- Human nature and potential
- Muslim scholars' involvement in the development of mathematics

Session 2

- IR 4.0 calls for a paradigm shift in science and technology
    a) A shift in paradigm
    b) The industrial revolutions

D. Summary of each component.

Meaning of paradigm

A system of beliefs, ideas, values, and habits that is a way of thinking about the real world. A paradigm is an example, model or pattern, especially the most basic or central one.

Process of seeking knowledge

- Practice.
- Ask.
- Desire.
- Get it from yourself.
- Walk around it.
- Experiment.
- Teach.
- Read.

Student Attributes

- a love of learning,
- a passion for knowledge
- a hunger to develop and grow academically.
- A good student has a growth mindset.
- A good student is brave.
- A good student is organized.
- A good student is consistent and persistent.
- A good student can deal with failure.
- A good student sets goal.
- A good student is able to connect learning to life.

Science and Technology perspective Islam

Science and religion are two sides of the same coin in the Islamic world-view. Islam does not differentiate between matters of state and matters of religion. The pursuit of knowledge in Islam can prove the link between science and religion. The Qur'an has many topics on scientific interest to persuade Muslims to think and to investigate nature. On every page the verses suggest that mankind gained knowledge through critical recognition of God's sign. The Qur'an for example, says: "Behold all that is In the heavens and on earth" But neither Signs nor Warners Profit these who do believe not.

Human nature and potential

Human nature is the sum of our species identity, the mental, physical, and spiritual characteristics that make humans uniquely, well, human. Human potential is the capacity for humans to improve themselves through studying, training, and practice, to reach the limit of their ability to develop aptitudes and skills .

Muslim scholars' involvement in the development of mathematics

Muhammad ibn Musa al-Khwarizmi, a scholar in the House of Wisdom in Baghdad, is along with the Greek mathematician Diophantus, known as the father of algebra. In his book The Compendious Book on Calculation by Completion and Balancing, Al-Khwarizmi deals with ways to solve for the positive roots of first and second degree (linear and quadratic) polynomial equations. He also introduces the method of reduction, and unlike Diophantus, gives general solutions for the equations he deals with.

Session 2

IR 4.0 calls for a paradigm shift in science and technology

A shift in paradigm:

The term paradigm shift refers to a major change in the concepts and practices of how something works or is accomplished. A paradigm shift can happen within a wide variety of contexts. A paradigm shift, a concept identified by the American physicist and philosopher Thomas Kuhn, is a fundamental change in the basic concepts and experimental practices of a scientific discipline. Even though Kuhn restricted the use of the term to the natural sciences, the concept of a paradigm

shift has also been used in numerous non-scientific contexts to describe a profound change in a fundamental model or perception of events. Paradigm shift examples are: Ptolemy center of universe > Copernicus centre of universe> Newtonian physics> Einsteinian physics> Monarchy> Democracy. In leadership we also see paradigm shift. For example: Authoritarian leadership to servant leadership.

The industrial revolutions

First Industrial Revolution: Coal in 1765

From agriculture to industry, the initial technological revolution changed our economy. For the first time, processes were mechanized and goods were assembled. The discovery of coal and its mass extraction, as well as the invention of the steam engine and the forging of metals, totally transformed the way products were manufactured and traded throughout this time.

Second Industrial Revolution: Gas in 1870

The second revolved around the invention of electricity, gas and oil, as the first technological revolution was powered by coal. With these fuel supplies, the development of the combustion engine went hand-in-hand. At this time, both steel- and chemically based goods entered the industry. Communication infrastructure advances had a head start with the telegraph and the telephone later on.

Third Industrial Revolution: Electronics and Nuclear in 1969

Nuclear technology and devices are hitting the landscape after another hundred years. Nuclear power originated in Europe, expanded in both Britain and the U.S., went into remission for years, and grew in Asia.

Fourth Industrial Revolution: Internet and Renewable Energy in 2000

We are seeing a transition to clean energies including sun, wind and geothermal as we begin to step into the fourth industrial revolution. The impetus, though, emerges not from the change of energy but from digital media acceleration. Inside more and more elements of a manufacturing line, both inside and outside facility walls, the internet and the modern environment suggest a real-time link. A technological universe will converge with the real world as the growth of the Industrial Internet of Things, cloud infrastructure and artificial intelligence progresses. For a multitude of

industries around the globe, predictive maintenance and real-time data can contribute to better business decisions. Autonomous robots, cloud computing, cyber security, internet of Things, Big data and Analytics are the examples of IR4.0 .

However, due to IR 4.0 there are several risks involved. High risks are Elementary occupations, Sales and Customer service occupations etc. Medium Risks are Skilled trades occupations, Caring services, Administrative occupations etc. Low Risk are Professional occupations, Managers, technical occupations etc. Also, there are several challenges in IR 4.0. Those are many people and events are constantly interacting. Then, people are becoming more individualistic and self-organizing, cannot predict the future level of uncertainty and ambiguity growing and so on.

Artificial Intelligence:

AI technology is important because it enables human capabilities – understanding, reasoning, planning, communication and perception – to be undertaken by software increasingly effectively, efficiently and at low cost. It reduces human error, digital health care advancement, available 24x7.

E. General Webinar Reviews.

The two sessions of the Webinar was very educational to me. The Webinar scholars have tried to explain science and technology with the Islamic perspective in a very modernized way. Several topics were unknown to me before the session. The scholar's communication process through presentation has helped me understand several complicated topics within a short amount of time. Also, the session related to IR4.0 has illustrated the importance and development of IR4.0 and its benefits and challenges. Thus, I hope the UTM management will conduct this type of session frequently to increase teacher-student interaction.