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THE ROLES OF ISLAMIC UNIVERSITY IN THE FOURTH INDUSTRIAL REVOLUTION ERA (4th IR)

Peranan Universiti Islam dalam Era Revolusi Perindustrian 4.0

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Abstract

This paper sheds light on the shifting reality foreseen in the fourth Industrial Revolution (4th IR) era in which the blurring line between essences (physical, biological and digital) indeed complicates the truth to be pursued and this must be made apolitical and amoral. Maintaining the ultimate roles of Islamic university where the question of happiness, revivalism of Islamic intellectualism tradition and *insan kamil* mission become the main concerns, this paper is esteemed to refine the roles of Islamic university in its layers of practices resulted from the clear and sound Islamic epistemological understanding at optimizing the benefits and preventing the pitfalls of the 4th IR technological confluence that has been rooming into the higher learning education environment. The methodology of this qualitative study has focused on the analytical philosophy analysis (APA) research design where the critical interpretive synthesis was being conducted to generate data from randomly selected literature as the source of data. The findings are discussed in 4 key domains of roles of Islamic university which are restatement of philosophy of Islamic education, integrated curriculum design with pedagogy based on *adab*, strategized research activities and academic professionalism and leadership practices centring on principal virtues.

Keywords: Islamic university, the 4th industrial revolution, Islamic worldview, Islamic epistemology.

Abstrak

Kertas kerja ini menerangkan era Revolusi Industri 4.0 yang berorientasikan teknologi gabungan yang kompleks antara esensi biologi, fizikal dan digital yang menjadikan proses pencarian kebenaran semakin rumit; justeru segala tuntutan era ini harus diperhalusi dengan lebih bijaksana dan berprinsip. Oleh hal yang demikian, usaha ini

harus digalas seawal di peringkat perumusan dan pengumpulan ilmu itu sendiri. Ini sudah tentu tidak terpisah dengan misi utama universiti Islam iaitu melahirkan graduan yang beradab. Sebagaimana persoalan yang dititikberatkan dalam pendidikan Islam tentang aspek keberhasilan insan kamil, kebahagiaan insan serta penghidupan semula tradisi keintelektualan Islam dalam perancangan pendidikan, kajian ini memfokuskan penghuraian tentang fungsi universiti Islam dalam pengamalan akademiknya yang didasari oleh pemahaman epistemologi Islam agar segala tribulasi mahupun potensi era revolusi industri 4.0 dalam sektor pendidikan tinggi ini dapat dikawal dan dicapai. Metodologi kajian ini adalah bercirikan kualitatif yang berfokus kepada reka bentuk kajian Analisis Falsafah Analitik dengan menjadikan teknik analisis interpretasi sintesis kritikal dalam analisis data kajian serta sumber data diperolehi daripada kajian perpustakaan. Dapatan kajian dibahagikan kepada empat domain utama peranan universiti Islam iaitu pernyataan semula falsafah pendidikan Islam, penumpuan kurikulum bersifat integratif dan adab dalam proses pengajaran dan pembelajaran, aktiviti penyelidikan yang strategik serta pengamalan professionalism dan kepimpinan akademik berprinsip.

Kata kunci: Universiti Islam, revolusi industri 4.0, pandangan alam Islam dan epistemologi Islam.

INTRODUCTION

The fourth Industrial Revolution (4th IR) narration has been pervasively deliberated ever since the discourse was mooted by Klaus Schwab in the World Economic Forum, Davos early on in 2016 (Dzulkifli, 2019). The 4th IR as nuanced by Klaus Schwab is an epoch with disruptive, systemically profound changes at the exponential rate in technological advancement based on the “cyber- physical- system” (CPS) that complicate the delineation between physical, digital and biological realities of our lives (Schwab, 2016).

The 4th IR has indicated the precursor of dramatically change in making machineries equipped with artificial intelligence, synchronization and autonomy in making decision alike a human could do to accomplish tasks. The hallmarks of this era according to Eldem (2017) are pertaining to the idea of internet of thing, simulation, autonomous robots, additive manufacturing, augmented reality, cloud computing, cyber-security, big data and analytics as well as horizontal and vertical system integration. Indeed, the 4th IR is not an isolated event that is out of the blue being destined upon us, yet it must be understood as the continuation from the narration of the former industrial revolutions with the idea of evolution in the course of technological advancement in industrial arena.

As the matter of fact, the complexities existed in the era of 4th IR are expectedly integrative and non-linear in nature as it was narrated where the 4th IR substantially posts the question of the relationship in the system of ‘man-technology’ (Kravchenko & Kyzymenko, 2019). If the former history of humankind advocated the subordination of technology to man and their clear delineation in terms of physicality or essences; however, 4th IR which includes humanity is narrated to be the era of partnership between artificial intelligent system, advanced technologies and man. Technologists seems so determined merging computational design, additive manufacturing, materials engineering, and synthetic biology to pioneer a symbiosis between microorganisms, our bodies, the products we consume, and even the buildings we live in. Consequently, we will be increasingly confused whether the quiddity of something is natural or artificial. This era finally will change not only on what we do but also who we are. Gradually, it will affect our identity and all the issues associated with it: our sense of privacy, our notions of ownership, our consumption patterns, the time we devote to work and leisure, and how we develop our careers, cultivate our skills, meet people and nurture relationships (Christensen, 2016). Not to mention, due to the massive digitalization of things that is exponentially being progressed, the social impacts might receive some alteration and adjustment in humans’ daily affairs, where the focal point of it goes to the fundamental questions such as morality, social equality, legitimacy and authenticity. Ironically, if these arrangements are not addressed by the right knowledge played by the right leaders, these may affect how humans re-conceptualize the definition of this life to the subjective ends thus, having no certitude of the real, ultimate happiness (*saadah*) that subsequently leads to the tragedy of life (*syaqawat*). Perhaps some tragedies have been appearing in the life cinema of the people of 21st century where spiritual, social and ecological divides are seen pervasive and uncontrolled.

However, the lamentation over these issues would not signify the total pessimism towards the serendipities this 4th IR could offer. Apparently, the key important technologies of 4th IR such as artificial intelligence, internet of thing, cloud computing, voice-activated personal assistants, virtual/augmented reality, chat box, block chain and cybersecurity are inevitably would extend so much limitation we had in the past into optimum potentialities in the way we work and interact to each other. Due to the change of the orientation of this physical system, the breadth and depth of these heralds the transformation of entire systems of production, management and human resources (Mustafa, 2018). The basis of qualities of 4th IR technologies goes into the aspect of their enhanced productivity, flexibility, competitiveness, profitability, safety and ecology (Cresnar & Nedelko, 2017). These somehow would assist the physical quality of life for humankind and maximize the benefits as the instrument of achieving the social and ecological justice as the perk of having the responsible of technological advancement from the lens of civilizational development.

In this respect, the researchers suppose that Islamic university is the domain in initiating this aspiration. Perfectly conceptualized by Al-Attas (1973) on the idea of Islamic university contending that the structure of establishment, constitution of knowledge, aims and aspirations of Islamic university is inevitably distinguished from Western university where the ultimate goal of Islamic education is to produce the complete man who is not specialist in any one branch of knowledge but is universal in his outlook and credible and authoritative in several branches of related knowledge. In this respect, Islamic university establishment be it form (*surah*) and meaning (*ma'na*) are at the total cleavage (contradistinction) with secular university due to the different principles underlying it specifically in the way we understood humans, knowledge and happiness. Erlich (2014) asserts that Islamic university must be among the leaders in knowledge because Islam rooted in the *shariah* decreed as an ordered set of laws for life that is integrative and interconnected in nature, so that's how things will be in the twenty-first century. Therefore, all sciences must be well-unified and rooted back to the virtue of *tawheed* in the larger scheme of knowledge structure as we call Islamic worldview.

As Muslims have our ultimate core business to be reaped in this worldly and hereafter affairs, therefore, the 4th IR nuance of future should be treated instrumentally (bedrock) to achieve excellence for Muslims in the worldly context (*fadhilah*) and in fact upholding the Islamic knowledge principles in life system is seen as the main key to preserve certitude and justice in dwelling in the truth. The researcher contends that the only way for Muslims to restore the Golden Age of Islam in the 4th IR epoch is through education centering on knowledge rooted in Islamic intellectual tradition; and the education exercised must be epitomized from the right understanding of meaning, ultimate goals and principles of Islamic education as a whole. Therefore, this study is esteemed to initiate the discursive instalment of resolution for Muslim educationists to revive Islamic philosophy of education in the higher learning education practices in the era of 4th IR in the virtue of the Islamic intellectual tradition.

METHODOLOGY

Research Design & Data Collection Technique

The methodology of this study is focused on the qualitative way due to its objective in presenting the interpretation of the Islamic university's roles in the context of the 4th IR era. Specifically in the qualitative study, the researcher purely employed the analytical philosophy analysis (APA) research design in generating the data and its interpretation. This design has been termed by Ghazali & Sufean (2016) asserting that APA research design seeks to elaborate a big concept into its smaller discourses underlying the said concept where the highly-order-thinking with systematic and systemic qualities are demanded from the researcher to come into the findings. The

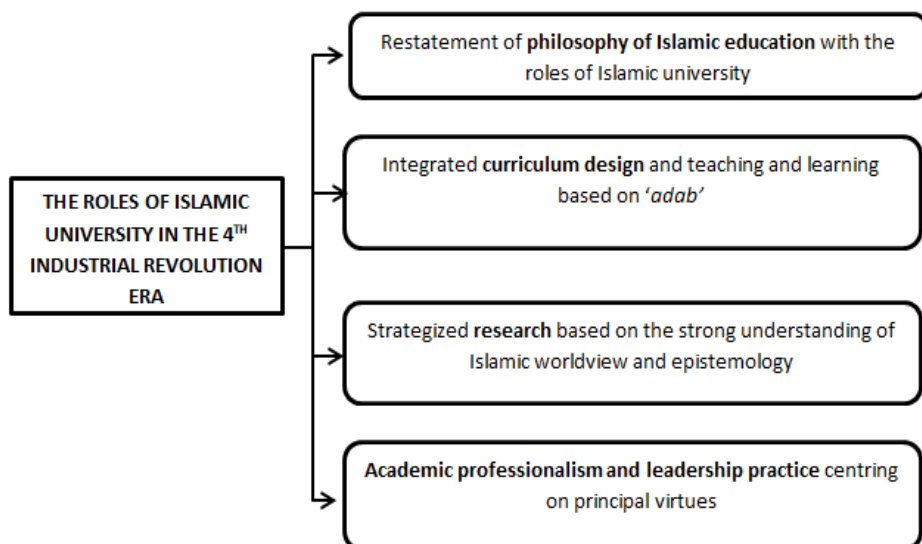
data collection method was sourced from the rigorous library search on the literature (secondary data-type) such as books, journal articles and policy reports. The selection of the sampled literature was conducted through theoretical sampling [as termed in Barnett & Thomas (2009)] and randomly by the date of publication and authors yet specifically chosen topically from the area of higher learning education, 4th industrial revolution, Islamic university, Islamic epistemology and Islamic education. On this note, the sample of the literatures were not drawn on the basis of their presence-ness because the authors found the worldview of this research is on the basis of perennially knowledge principles that are unchangeable as being discussed in Islamic intellectual tradition unlimited in the clock form of the knowledge evidence.

Data Analysis Technique

According to Hsieh and Shannon (2005), qualitative content is a technique suitable for abstract and subjective interpretation of the data content by using the systematic classification. The interpretation of every domain of this research finding was developed based on the researchers' synthesis on the literature referenced constituting the critical interpretive synthesis. According to Dixon-Wood *et. al* (2006), critical interpretive synthesis involves an iterative approach to refining the research question, searching and selecting from the literature (using theoretical sampling) and defining and applying codes and categories. It also has a particular approach to appraising quality, as a defining characteristic, critical interpretive synthesis's critical approach to the literature in terms of deconstructing research traditions or theoretical assumptions as a means of contextualising findings (Gough, 2007). After having a thorough reading on the literature selected, the researchers generated the themes of the discussion by ruling out some cardinal domains integral to the narration of the 4th IR era in the context of Islamic university. Fundamentally in this critical interpretive synthesis employment, the deliberation of the themes into four domains which are philosophy of Islamic education, integrated curriculum design, research and academic leadership depicts the main aspects concerned in higher learning education science in which the researchers suppose these four domains can approach and resolve the objective of the study in all-encompassing grasp.

FINDINGS

After the execution of the content analysis upon the randomly selected literatures, the researchers deliberated the main themes of this paper into 4 domains which are philosophy of Islamic education, integrated curriculum design teaching and learning based on '*adab*', research and academic leadership. Diagram 1.0 illustrates the domains of the discussion of this paper.

Diagram 1.0 The Roles of Islamic University in the 4th Industrial Revolution Era

i. Restatement of Philosophy of Islamic Education with the Roles of Islamic University

Makdisi (1981) in his magnum opus, *The Rise of the College, university in Islamic world as 'al-masjid al-jami'* means the mosque that brings together, uniting the congregation of the faithful. Newman (1852) enlightens us that university is a place where all students from every quarter of this world come for gaining every kind of knowledge. Based on these two definitions, university can be seen in general as an institution that assemble diverse learners who are pious to collectively pursuing truth and flourishing the knowledge for humanity. It is the medium where the communication and circulation of thoughts from different schools are conducted by the way of discourse. This is how myriad of schools can make contributions. Apart from that, the freedom of academic is safely secured where ideas are encouraged to be put forth; the new breakthroughs are validated and perfected.

The fundamental duty of Islamic university leader is the clarity of philosophy of Islamic education as the mission statement of an academic institution. Amidst of the secular- dominant ideology the whole world is encountering yet holds so dearly the idea of neoliberalism and marketization of education, the need of every Muslim educationist to understand Islamic ultimate aim of education centering on the

principles of '*insan*' and '*ilm*' seems so critical and requires constant admonition as the act of reckoning (*muhasabah*) whether are we doing the right thing or do things correctly in educating. Undeniably, educationists are very much informed perhaps attempted to adjust educational planning with the expectations the industries and markets would demand when it comes to the students' employability in the 4th IR workforce. New Economic Forum (2016) highlighted that there will be 10 skills-to-thrive in the 4th IR revolving with digitalization of systems which are complex-problem solving, critical thinking, creative, people management, coordinating with people, emotional intelligence, judgement & decision-making, service orientation, negotiation and cognitive flexibility. Based on these lists, the bottom line of this era has always pointed out to the question of people and technology.

Islamic education aims for the balanced development of individual as a microcosmic kingdom that encompasses the faculties of spirituality, intellection, emotion and physicality harmoniously as termed as '*insan kamil*' (universal man) or a 'good man' (Al-Attas, 1970; Al-Attas, 1994). However, Islamic education philosophy contends that the aspiration for individual as the social agent (leader, worker and citizen) to a just world is within this locus of discussion when we discourse this in the context of humans' role as vicegerent (*khalifah*). In this respect, a good man will indirectly be beneficial and contributing to his or her society and country in any respects of national or global development.

In the 4th IR, this perennial notion of educational philosophy should be understood and contemplated by Muslims' educationists in deliberating and making decisions in educational practices. Chiefly in approaching this point, the researchers suppose that in the given 4th IR era, we have gone so specialized, progressed and overwhelmed to the novelty of innovations inevitably. In perceiving what is changeable and unchangeable in embracing what is new in educational innovation is existentially based on the question of knowledge (*i'lm*), human (*insan*) and the verb of educating (*taadib*). Specifically in the main concern in 4th IR era as to how education can retain the quiddity and hierarchy of human as *insan* in place in the physical-biological-digital-nature of life. Importantly in holding such perennial and transcendental stance over this issue is that because the essence of human (physical and spiritual) and knowledge are in nature unchangeable and forever be retained in its ontological conception as universal that is free from the shift of physical circumstances. *Taadib* is in essence focuses on the instilling and inculcation of *adab* as *akhlaq* in man (Mahmud, 1985) that is always stemmed from the right knowledge ('*ilm*) and proper and sincere action ('*amal*) for the significantly elements in the intelligent emulation of the Holy Prophet as the example to humankind (*qudwah hasanah*) (Al-Attas & Wan Moh Nor, 2014). Al-Attas connotes *adab* as the recognition and acknowledgement of the reality that knowledge and being are ordered hierarchically

according to their various grades and degrees of rank and the ultimate position of God therein, and of one’s proper place in relation to that reality and to one’s physical, intellectual and spiritual capacities and potentials. In this sense, the *insan* we are envisioned in Islamic education is the one who is capable of demonstrating the qualities of God in humanly limitation (*takhalluq bi akhlaq Allah*). This conception of human education rooted in Islamic intellectual tradition has very much inclusivity to address the ontological status of human and knowledge in relation to life as a whole (non-dichotomy) and in fact integral to be restated and re-highlighted in the brink of 4th IR that requires graduates to make the right decisions (to possess proper judgement) in every layers of their lives’ affairs that are getting more complex, disruptive and unpredictable.

ii. Integrated Curriculum Design with Teaching and Learning based on ‘*Adab*’

The second domain addressed is teaching and learning that encompasses curriculum design and pedagogy/andragogy employed in the 4th IR epoch. Principally, the tenets of teaching and learning stem from the presence of student (learner), knowledge (what’s learnt), pedagogy/andragogy (teaching & learning platform) and assessment (Noor Hisham, 2011). In this section, the researcher will address principles underlying in the aspect of knowledge taught (the dimension of dynamism of *fard ‘ain* and *fard kifayah* knowledge) and what connotes ‘*adab*’ in the aspect of pedagogy. In the brink of 4th IR, it is to note that the technologies are drawing no lines between the physical, digital and biological aspects for the betterment in life (OECD, 2016). The transformation of the 4th IR based on the characteristics to the human-centered characteristics, including the digitally proficient, critical thinking, people management, emotional and inquisitive intelligence, empathically judging, innovative and entrepreneurial, resilience with cognitive flexibility and lifelong learning management (Haseeb, 2018). These characteristics and competencies are encapsulated and termed as water-proof graduates indeed requires the exceptional attention in relation to the curriculum design development.

What to be strengthened in the era the 4th IR rests in the integrative dimension of curriculum. According to Hassan Langgulung (1997), curriculum is the queen of education; therefore Muslim educationist must pay attention in its development. The main formulation of curriculum must be based first and foremost in the understanding of ‘*insan*’ and ‘*ilm*’ in a given era of presence; and only a curriculum developer can deliberate the arrangement of lesson in comprehensive manner. Islamic university must committed and firmed to manifest the main ethos of our intellectual tradition that is based on unity of knowledge that necessitates the integrative system of curriculum where the knowledge of *fard ain* (everyone’s obligation) and *fard kifayah* (certain group of people’s obligation in a given community) should be treated in dynamic way (Tahir, Abdul Hakim & Amina, 2015). The knowledge of *fard ain* must be taught by

orderly attainment stage such as *tawhid*, *fiqh* and *tasawuf*, ‘*ulum al-Quran* (quranic sciences)

Ulum hadith and (hadith sciences) mandatorily upon every Muslim while the knowledge of *fard kifayah* knowledge must seek to fulfil the communal, national and global objective. Hassan Langgulung (1997) on the same note contending that the *fard ain* and *fard kifayah* knowledge can be explained in the classification of perennial knowledge and acquired knowledge respectively. Not to mention, Rosnani (2007) and Hashim Kamali (2011) emphasize the critical thinking quality among graduates should be addressed in curriculum through the teaching of Islamic trivium components (*nahu*, *mantiq* and *bayan*) that teach students the comprehensive tools to learn correctly in any given era that counts. In the era of 4th IR, the digital literacy might be the whole narrative of the education environment. As much as this component of digital literacy orienting the curriculum of mainstream system might emphasize, the same enforcement is given to the teaching of Islamic trivium components as to plant the students with the capacity of thinking systematically and that of systemic.

What is more, arguably in term of pedagogy, the narration of higher learning delivery in 4th IR that is focused on student-centered learning where students as the contents curator, collaborator and teacher while lecturer as resource guide (Ministry of Higher Education, 2018) is somewhat bold but must be held accordingly. The context of its employment in teaching and learning must be ascertained by what kind of knowledge the learning is all about. In this regard, the question of ‘*adab*’ comes into the picture where the weightage of the authoritative teacher and the proper stage of arrangement of lessons must be put in consideration (Wan Suhaimi, 2020). If students are left without the right guidance from authoritative lecturer and without right learning strategy in curating their content of knowledge in the dry engagement virtually, students may drown in the ocean of knowledge and to some degree of concern, they are vulnerable to be diluted into the problem of knowledge confusion or error of knowledge. This is because, in the absence of right teacher guiding students in understanding, the students also might be ceased of having the impartment of ‘*akhlaq*’ and values lessons from the lecturer. According to Mahfuzah & Ahmad Fakhurrazi (2009), there are specific aspects of *fard ain* knowledge that requires longer period of lesson and not to be learnt through mediated platform because it involves the process of instillation of Islamic worldview that concomitantly shapes students’ *akhlaq* through the process of *musohabah* and the spiritual connection between teacher and students. Therefore, the employment of student-centered learning is possible to be applied in the teaching of knowledge of *fard’ kifayah*. However, in the case of *fard’ ain*, the ‘*adab*’ of teaching and learning process of this science must be observed meticulously.

iii. Strategized Research Activities based on Strong Understanding of Worldview and Epistemology

Indeed, research activity has been one of the key practices of modern university. The term research referred in Arabic is '*al Bahth*' which connotes to search. It is also termed as '*al-Tahqiq*' which is derived from the root word '*Haqqaqa*', which means to discover and to confirm the truth (Mansour, 2020). Therefore, research is indeed laborious and systematic inquiry or investigation into a subject in order to discover a truth or revise facts. The emphasis of undergoing research has been multiply enshrined in Al-Quran; one of them is well stipulated in Surah Ali Imran, verse 130, "*Look! The creation of the heavens and the earth and (in) the difference of night and day are tokens (of His sovereignty) for men of understanding*". There are two cardinal aims of having research practice in higher learning education at this present time. First aim is grounded beneath the intention for academics and students in participating in knowledge exploration for enhanced educational experience for professional development (Fung, Dilger & Rob van der Vaart, 2017). The other one holds true to the fact that university is not an ivory tower requiring gurus and researchers to seek for knowledge of truth to build and transform the nation (Munif Zariruddin, 2017). By meaning, the ultimate pursuit of doing research is to seek and validate truth yet when talking research and innovation as modern Islamic university practice in place, it yields another two significant roles; i) knowledge exploration as an educational training and ii) social function for societal problem-solver and public reference.

Unequivocally, the digitalization of the technological system of the present highlights how humanity especially secularist have established novelty in imaging, pioneering and actualizing the unthinkable things in the past, yet this so-called physical progress unnecessarily has addressed their past problems especially in providing their morale epistemological justification in technology due to their beliefs of neutrality of knowledge and subscription to the pragmatism. Current framework for the study of past technological development suffers as in the history of science that the past is studied independently of the worldview and epistemic framework of the scientists and the technologists (Muhammad Husni, 2015). Ibn Khaldun in Muqaddimah addresses the idea of technology as *sina'ah* (scientific art) as the capacity of making thing known in industry as the resultant of man's intellectual ability to comprehend, organize and master the science ('Abd Abdullah Muhammad Darwish, 2003). Ibn Khaldun further elucidates the usefulness, knowledge of tools, machineries, techniques, crafts and system to solve a problem, as a tool for specific function or better performance. Hans Radder (2006) in this sense, asserts that technology and science are indeed in a close reciprocal relationship (where technology is the derivative of science) yielding an insight that science and technology share the same kind of rational thinking based on empirical observation and knowledge of natural causality, but technology is not

directly concerned with truth but with its usefulness. Where science seeks to know, technology seeks to control. So, briefly from these enumerations, we ought to perceive technology as a tool and not of an end; philosophy of technology clearly belongs to the self-awareness of a society where it teaches us to reflect that the usefulness of a technology is bound with the values of the science (axiological) and the values of the inventor himself or herself by intention.

The training of doing research based on the strong epistemological advocacy must be endowed in the first place among the supervisors, students and researchers as so the knowledge probed is meaningful and resolving. It is then necessarily will solve the problem of the surrounding society in more sustainable way. Chiefly, in the course of IR 4.0, the comprehension of Islamic worldview becomes so critical and priority because that is the most rooted knowledge that can help humans to distinguish between justice (*'adl*) and injustice (*zulm*), permissible (*halal*) or prohibited (*haram*) as well as beneficial (*maslahah*) or wasteful (*mafasid*) (Sardar, 1984). As Islamic worldview governs the relationship between man and himself, man and other men, man with God and man with nature, these bottom line principles could guide humans in manifesting their free-will of materializing creativity and knowledge into usefulness for civilizational development (Yahya & Azhar, 2014). Scientific and technological activity that promotes *adl*-distributive technologies and science for people will draw their legitimacy from *maslahah* (public interest) which is the chief supplementary source of Islamic law while science and technology which has these major characteristics such as destroying human, environmental and spiritual resources and generate waste is therefore categorized as *mafasid*. Therefore, to be autonomously ethical in embracing 4th IR, those comprehensions must be made understood and contemplated for intellectuals or academics that the destiny of knowledge development lies in their responsibilities where the question of justice must be upheld ultimately regardless of any scientific revolution across the ages.

Therefore, there are two key aspects of strategy to be paid attention in this regards towards producing sincere, wise responsible and futuristic researchers or innovators in Islamic university that are through the instilling of right creative thinking quality and the systematic management of the knowledge niche in Islamic mold. Throughout history, and the previous industrial revolutions, technology has continuously been the *avant garde* for human progress (Raphael & Nicolaidis, 2019). The aspects concerned have always pointed out to the question of technology for the tool of betterment for individual, social and ecological with the need of probing the new potentialities for the unthinkable inventions for benefitting wisely the gift of the *aql* for humans and natural resources God has endowed to humanity.

Therefore, this endeavor seeks education to really emphasize the training of mind to be creative and critical in producing such responsible, resolving and progressing innovation. This quality is epitomized from the capacity of humans' imaginary (*khayal*) where the five senses' experience and the quality of rationalism grounded in the worldview of comprehensive values of a person undergoes the process of reaching the underlying meaning (so-called the process of abstraction) to materialize the values into being. *Al-Khayal* indeed requires the interventions of research advocacy from three main dimensions which are theological dimension (God-centred), ontological-cosmological dimension (the comprehension of the degree and quiddity of existence) and epistemo-psychological dimension (the interest and the abilities of human in perceiving and knowing about something) (Mohd Zaidi, Wan Suhaimi & Mohd Farid, 2011).

These dimensions are of important parts of humans' creativity to materialize such good and genuinely useful product of real knowledge. This is because the arrangement of knowledge principles' hierarchy in the scheme of the reality of a subject matter of thing (what is researched) has been meticulously and unduly secured in harmonious and just manner in the faculty of humans' thinking of its end or ideal and the action is concomitantly sprang from that mental abstraction that is founded on the basis of genuine inquiries (Lawrence, 2005). Hasanul (2019) also explains that the real knowledge explored when the image of the mirror of the soul is in the conformity with truth and reality that is permanent in nature. The concept of permanence of the existents in the hierarchy of existence refers according to Imam Al-Ghazali in his *Ihya' Ulummu'ddin* to the concepts of abstractness and universality. The more abstract and or universal a thing is, the less particular it is and thus the lesser it tend to change (Nabih Amin, 2011). This principle is imperative to be understood as a researcher in dealing with knowledge as so we are not going taint and corrupt the content of knowledge explored. Thus, the cultivation of creative mind necessitates the strong comprehension of Islamic metaphysical worldview, philosophical modalities and the knowledge of particulars (sciences) as the most-strive-qualities in Muslim researchers.

Another variable that is integral in research strategies in the 4th IR is the systematic management of the knowledge niche in Islamic mold that is to be seen from managerial perspective. Firstly, to really create a research niche is not of something we often see like a competitive advantage today's university is adopting; rather it must be grounded on the question of necessity (*maqasid*) of the *ummah* based on priorities. This becomes the basis of how university's contribution as the problem-solver of the current gaps through the recognition of the criticality of the priority or need of knowledge exploration with respect to the regional, societal, national, periodical, economic and ecological agenda. This requires the capacity of the researchers to recognize and acknowledge the root issues of the societies closest and from what

cluster the issues epitomized from in the spectrum of *Maqasid Shariah*. Dimensions inherent to this concept are the preservation of religion, life, mind, progeny and wealth. These spectrums also must be well-addressed in the weightage of degree of priorities which are *dharuriyyat* (necessity), *hajiyyat* (complementary) and *tahsiniyyat* (embellishment) (Auda, 2014). When there are problems happened around us, these are the considerations that count such as when there are the great needs of something in priority, when there are potentials/available resources/ expertise, when we inquire for future and whenever there is a need to answer the bigger questions of life. In this sense, the question of justice, necessity, novelty and passion in pursuing research and innovation is addressed harmoniously.

iv. Academic Professionalism and Leadership Practices Centring on Principal Virtues

Academic leadership is notably one of the independent discussions concerned in education arena because it has gradually establishing its corpus of discussion which is very contextualized and stratified, integral to the practicality of knowledge principles in educational decision-making. The notion of academic leadership necessarily goes beyond the logic of formal managerial positions (eg. university's president, vice chancellor, deputy vice chancellor and dean etc.) where it is epitomized in the first place from the credibility and authority of knowledge held by individual academics in professing their academic authority combined with the responsibilities in leading knowledgeable society in the trajectory of knowledge by which the levels of concern encompass the form of academic leadership at the individual academic, community of academics, academic institution and public (Mohammad Kamal, Mohd Rushdan & Ismie Roha, 2019).

On the other hand, Saeedah Shah (2006) contends that the virtues of Islamic academic leadership conception (where Islamic university must hold) are well-rooted in the verse, “*Are those who possess knowledge and those who do not on the equal footing?*” (Quran: *Surah Az-Zumar* :9) and “*God will raise in ranks those of you who believe as well as those who are given knowledge*” (Quran: *Surah Al-Mujadalah*:11). In general, she deliberated these two Quranic verses constituting Islamic academic leadership emphasizes knowledge possession as the determinant of the rank of leader in leading society. In this sense, academic leaders are mandated to lead the society through the modalities of their knowledge authority in managing the development, propagation and conservation of knowledge in a running of the system of society with the significant of exemplary demonstrates of a guru leading with the right knowledge. Responding to the narrative of the 4th IR in educational environment, the Islamic academic leadership we seek must capable of genuinely and responsively deliberating the meaning of education in Islam (*taadib*) into the multitude, disruptive forms of educational practices in this unprecedented era. If other domains concern on the

curriculum, teaching and learning process and research in particular, this domain of academic leadership scrutinizes all of these university operations as a complete whole through the trajectory of good leadership and governance, knowledge-based educational policy-making and university culture based on Islamic intellectual tradition.

Perhaps, in the aspect of practicing good leadership and governance, Islamic university must committedly envision the right philosophy of institution as the guiding principle in setting up the direction of the academic institution integral to the manifestation of the unification of knowledge. This explains that good understanding of philosophy of education will spring the good educational policy (Michaud, 2015; Hanachor, 2018). As Islamic philosophy of education concerns to the strategized planning of complete man, therefore, the gist of the educational organization and administration of knowledge in Islamic educational system should reflect the universal man (*al-insan-al-kulliyy*) (Wan Mohamad Nor, 1998). Speaking on the governance amidst of the 4th IR circumstance, humans must be put first above all (Arfah & Aziuddin, 2014). University governance is about guiding framework for the university towards achieving its vision and goals as an institution of professionalism, scholarship, research, and knowledge advancement (Sufean & Soaib, 2016). University governance must serve institutional philosophy in the first place while measuring up the set of expectations of the many stakeholders, from the students, academics, and industries up to government. It is in fact not that of being controlled; yet it is about imparting opportunities, facilities, and resources for accomplishing its further development and sustainability. Sufean & Soaib (2016) assert that if university governance is handled with control by non-academic pursuits (eg. Economic, politic), it would affect the university to be turned out as an oppressed institution, undergone reductionism in terms of intellectualism, scholarship, and knowledge advancement. Freedom to explore all disciplines of knowledge and to exercise ideas wisely should be the zeal of the university leaders. Therefore, in the 4th IR epoch, the government must ensure the autonomy and academic freedom of the academic leaders are to be granted in working within the ‘rule of jungle of 4th IR’ assimilated by corporate institution in upholding the ultimate goal of inculcation of *adab*.

Philosophically speaking, the quality of academic leaders in strategizing what is in line and agreed with the rules of knowledge with other stakeholders of the industries in 4th IR must be weighted from the four cardinal virtues which are wisdom (*hikmah*), courage (*shaja‘ah*), temperance (*iffah*) and justice (*‘adalah*) as termed in Al-Attas & Wan Mohd Nor (2014). These efforts towards the attainment of cardinal virtues flourish to a possession of ‘*tadbir*’ quality to the academic leader committed. This ‘*tadbir*’ quality enables academic leaders to be both theoretically strong and rightly practical where he or she according to *al-Jurjani* in his *al-Takrif* is capable of putting

matters into effect in accordance with the knowledge of what will follow in the end (Mohd Zaidi & Mohd Sani, 2019). This must be understood as an academic leader in managing intellectual institution where *insan* and *ilm* as the subject matters of the leadership. The definition of the subject matters of the institution governed does ascertain how we strategize the institutional planning in term of students' curriculum, pedagogy, assessment, academics' training and evaluation and research activity. In order to relevant in the celebration of knowledge paradigms and contexts in 4th IR era, academic must possess what it takes to be a real thinker which is multidisciplinary, critical, creative and holistic. Academic leaders must be really well-equipping themselves with digital literacy and demonstrate holistic thinking in every layer of their leadership as to see all things from bird's eye view. This is because the nature of success a university is striving for is multifaceted and diverse (Parkin, 2017). Universities are not doing one thing; they are doing many things concerning research, learning and teaching knowledge, exchange local community engagement, knowledge transfer internationalization, and transnational education, multidisciplinary research and the list goes on and so successes revive across many fronts and so it requires us to engage academics with their hearts and energies in many endeavors which is a very challenging thing for leaders to do as well as to coalesce a single vision around those multiple perspectives. This is best referring to the capability of a leader in philosophizing things or putting things into perspective without losing the sense of interconnectedness and wholesomeness of those perspectives in understanding the world. According to Mertz (2013), the ability of successful leaders as a problem-solver or decision maker lies in how skillful they are in recognizing things in their situated matrix of knowledge system, turning the problem inside out, turning problem upside down, taking it inside and solving or reconciling things as a whole.

In the pursuit of genuine academic leadership in the age of the fourth Industrial Revolution that is full with either unprecedented serendipities or uncertainties, academic leaders in higher institution learning are in the position of ascertaining the stance and pathway for humanities towards the progressive development that are wholesome, sustainable and excellent. The nuance of leadership in higher education institution is to connect people's personal energy (expertise) with the purpose and vice versa, connecting the higher purpose with people's personal energy whether through inspiration, social exchange and creating wonderful environment for an academic to flourish. It is quite obsolete to associate academic leadership with mere instruction, command or control, yet it is all about enabling and empowering academics to freely invest with their own expertise for a change. This necessitates academic leaders to attain the "sense of whole" or multidimensional sense of the professional self in exercising their obligation (McMillin, 2004). This is envisioned to put forth the academic leaders towards becoming a complete scholar that is characterized to have a wide range of choices and options across the life span, capable of acting as in line

with knowledge principles and well responding to the ever-changing needs of institutions and society at micro and macro level in any given circumstances.

CONCLUSION

As a concluding thought, Islamic university indeed shoulders such a pertinent and rigorous commitment in ensuring our *ummah* deserves such comprehensive and right education in preserving the authenticity of Islamic intellectual tradition suitable with the contexts of the era of present. The 4th IR narrative as a passing point of time in the history of humankind; even though it is inevitably overwhelmed with unprecedented serendipities and uncertainties foreseen, *ummah* must devote to stay excelled (*fadhilah*) in both the worldly and hereafter affairs. Therefore, Islamic educationists as the key players of this pursuit must be presently awake in actualizing the ultimate aim of Islamic education towards producing a good, comprehensive individual (*insan kamil*) despite of the physical circumstance changes. Situations served might be radically different from what we had in the past, yet the important principles in education such as '*insan kamil*', '*ilm*', '*taadib*' and '*taabir*' rooted in Islamic intellectual tradition ought to be preserved at all times in essence and made flexible and deterministic at the form level (manifestation or practice). The four avenues refined herewith as the integral roles of university in the 4th IR era in understanding philosophy of Islamic education, developing integrated curriculum design with '*adab*' in pedagogy, possessing strong understanding on Islamic worldview and epistemology in knowledge development and practicing the strategic academic leadership and professionalism are seen imperative for Muslims to flourish in civilizational development (*tamadun*) ahead.

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