Muslims and Science: Contributions of Islamic Universities to Professional Ethics

Ibrahim Olatunde Uthman

Abstract

It is sad and paradoxical that Muslims, who were once the precursors and torchbearers of the scientific knowledge that culminated in modern civilization, are today wallowing in a state of backwardness, ignorance, and domination. Despite their global numerical strength of over one billion people,[1] only a few Muslim countries are currently making any significant strides in shaping contemporary civilization and the state of the world. This paper examines how the Islamic concept of *khilafah* (vicegerency) can be employed to revive Islamic science so that it can sustain human and other creatures in a wholesome manner. It argues that teaching secular sciences according to Islamic principles, as is being done today at the International Islamic University, Malaysia (IIUM) and Nigeria's Crescent University, Abeokuta (CUA) will reverse such negative trends.

Introduction

In a recent paper, I argued that studying secular sciences according to Islamic ethical principles can make them Islamic. This is what distinguishes Islamic civilization, which reached its zenith during Europe's Middle Ages, from its European counterpart.[2] Its remarkable achievements, as noted by Bernard Lewis, shook Europe out of its centuries-long slumber.[3] According to D. N. Dunlop, these scholars' contributions to modern education began appearing in Europe during the tenth century, and by the thirteen century their works in almost all branches of knowledge could be found throughout Europe.[4] Known as *hukama'* (wise men), they were patronized

The author is a lecturer in the Department of Arabic and Islamic Studies, University of Ibadan, Nigeria. He can be contacted at ibrahimuthman@yahoo.com.

by the caliphs because they were true universal scholars who had mastered many physical, natural, human, and revealed sciences.[5]

They were also guided by ethical considerations, the very ones that are missing from the development of contemporary scientific, engineering, biomedical, financial, and other disciplines. One result of this absence has been numerous man-made problems, as will be detailed in the next section. As suggested by Mohamad Shamsher, since "ethical behavior is not inherited but must be instilled and nurtured through systematic training programmes that must be implemented consistently in the most objective way," the failure of the current educational system at the global level calls for an in-depth investigation as to why it produces professionals and experts who, despite having not imbibed the "character" or "discipline" of their educational curriculum, are nevertheless awarded degrees for having been found "worthy in both learning and character" or "knowledge and discipline."[6]

These systematic training programs must begin at the pre-primary level, when one is still a child and in the formative years. The rationale for this can be seen in the story of Luqman and his son (31:12-18), which deals with ethical conduct in all aspects of life. Yet it would appear that whatever ethical behavior is instilled and nurtured via systematic training programs during those years is gradually lost at the tertiary school level because those students must be trained and taught in the most objective way and with "sincere efforts to uphold the desired code of ethics and conduct that transcends the political, social, religious and racial barriers."[7]

The failure of tertiary institutions of learning to sustain and nurture the code of ethics and conduct instilled during childhood must be located here, because any attempt to divorce religious teachings from codes of ethics and conduct cannot succeed. Tertiary education plays a significant role in employing logic and reason to help students conform to acceptable ethical behavior or, for those already working, to further enhance their ethical beliefs and actions. In this respect, Islamic universities like the International Islamic University, Malaysia (IIUM) and Nigeria's Crescent University, Abeokuta (CUA) are making large contributions. Given this, the remainder of my article will examine what has caused scientific knowledge to stagnate in the Muslim world against the background of its classical-era scholars' vast contributions to science. After this, it will explore Islam's philosophy of education and how Islamic universities are helping impart professional ethics to their students based on *khilafah* (vicegerency) and ethical teachings.

The Bifurcation of Knowledge

Muslims, who once served as the precursors and torchbearers of the scientific knowledge that culminated in modern civilization, are today wallowing in backwardness, ignorance, and dependency. Their absence from modern civilization can be linked to a latter-day perception that secular sciences are somehow un-Islamic. This erroneous idea was nurtured by *taqlid* (blind allegiance to tradition). Ironically, Muslim thought remains alive in the West. This is reflected even in the academic study of Islam, as seen in the nomenclature: Islamic studies. According to this nomenclature, the academic study of Islam purports to be the only branch of knowledge that is Islamic, for by definition that which is Islamic must be in consonance with the dictates of Islam and the Prophet's teachings.

This development engendered the bifurcation of education into "Islamic" and "western." As a result, "western" education was almost unanimously rejected when it appeared in the Muslim world, despite the strong support for it among such leading Muslim scholars as the Shaykh al-Azhar Hasan al-Khalwati, Jamal al-Afghani, and Muhammad Abduh. Kamil Oloso has further shown that this rejection was engineered and encouraged among Nigerian Muslims, especially those in the north, by their British colonial masters to suppress or decelerate the Muslims' power because they did not want to lose Nigeria.[8] This fear has been aptly described by Peter Clarke, who writes that the British were never sure of the Muslims' loyalty, including those whom they sought to buy off with privileges like trips to Makkah. This genuine fear can be seen in the religious leaders' stiff opposition to the colonial masters despite the emirs' support for the British. Abubakar Mustapha, the former vice-chancellor of University of Maiduguri, has traced how these colonial fears guided Britain's conception and development of Islamic education.[9]

The perception of secular science as "un-Islamic" and of religious knowledge of Islamic teachings, practices, and laws as "Islamic" contradicts Islam's dictates and teachings, for it recognizes no such bifurcation between revealed (divine) and acquired (human) knowledge. In fact, Islam teaches that both types of knowledge concerning the human psyche, society, the universe, and nature constitute holistic sources of guidance. Many Qur'anic passages (e.g., 3:190-91, 10:1, 12:1, 13:1, 15:1, and 30:20-25) refer to both revealed and acquired knowledge as the *ayat* (signs) of Allah that must be taken and understood together if humanity is to be successful on Earth.

The Sunnah is also replete of many incidents that confirm that the *ayat* found in the divine laws governing creation must be understood in order to

uncover these laws. For instance, the Prophet used knowledge acquired through observation, experiment, and experience as source of religious and secular guidance when he observed Ibn Sayyad, a Jewish youth, to understand his unusual character and to ascertain if he was indeed the Antichrist. In fact, in this particular case the Prophet can be regarded as having employed what we now consider the prerogatives of experimental psychology, psychiatry, and other paramedical sciences related to the study of human nature.[10] Only when people take the initiative, according to these and other passages, to change their natural states through their knowledge of the universe predicated on revelation can they ascend from one state of civilization to another (11:13 and 84:16-19).

It is noteworthy that the Middle Ages, the period preceding the Renaissance and the subsequent scientific and industrial revolutions, is usually depicted in European history as the Dark Ages. Yet this is correct and tenable only if it refers to Europe. This period, when Europe persecuted, imprisoned, and even burned its scientists and intellectuals alive because their opinions and views were believed to oppose Biblical teachings, is indeed a very dark era in human history. What happened during it was due to a deviation from the Bible's true teachings and the infiltration of man-made ideas and theories into it.[11] This cannot be said about the contemporaneous Muslim world, however, a time when Islamic civilization was at its zenith.

The contributions of Muslim scholars started appearing in Europe during the tenth century, when the schools of Lorraine (Germany) began translating their astronomical and mathematical texts. This was followed by Constantine Aficanus' (c. 1020-87) translations of medical works in southern Italy. By the thirteenth century, the works of Muslim scholars in almost all branches of knowledge were widely available in Latin; hence, their names were Latinized: Geber (Jabir ibn Hayyan), al-Kindus (Abu Yusuf ibn Ishaq al-Kindi), Khiva (Muhammad ibn Musa al-Khwarzmi), Rhazes or "the Arabic Galen" (Muhammad ibn Zakariya al-Razi), Alhazen (Abu Ali al-Hasan ibn Haytham), Avicenna (Abu Ali al-Husayn ibn Sina), Algazel (Abu Hamid al-Ghazzali), Averroes (Abu al-Walid Muhammad ibn Rushd), and others. These Muslim scholars, who enjoyed the caliphs' patronage, were known as *hukama'* because they were universal scholars who had mastered the physical, natural, human, and revealed sciences.[12]

It is appropriate at this juncture to illustrate some of the contributions to scientific knowledge and civilization by some Muslim scholars. Contrary to Lewis' claim that Muslim geographers knew very little or nothing of other continents until the nineteenth century, George Sarton, the well-known histo-

rian of science, described al-Biruni as a great scientist and one of the greatest astronomers of all times who gave minute mathematical calculations, calendars, and lunar stations about the Indian subcontinent and other peoples of antiquity. Some regard him as the founder of geodesy because of his detailed and systematized measurements of the features of Earth's surface and accurate accounts of landforms and features. He and other Muslim astronomers uncovered eastern and western lands previously unknown or the locations of which had been confused as a result of errors in longtitudinal calculations. Al-Biruni also discovered the sedimentary nature of the Ganges Basin along the Indian Ocean, conducted studies on the chemical composition of minerals. and combined the sulfur-mercury theory of metals with the theories of Aristotle and Theophrastus. He faulted Peripatetic physics on the question of motion and place, the continuity and discontinuity of matter and space, and the elliptical shape of the heavens.[13]

Ibn Sina, who wrote on mathematics, geology, philosophy, physics, and medicine, made a deep study of physics. One section of his second monumental work *Kitab al-Shifa'* (The Book of Healing), which was translated into Latin as *Sufficientia*, discusses medicine, physics, mathematics, logic, mineralogy, and other natural sciences. He agrees with his contemporaries that light travels from the object to the eye. Although he was a universal scholar, his magnum opus is his *Canon of Medicine*, in which he summarized, for the first time, the principles of medical theory and practice as well as a description of meningitis and psychometric medicine. It was the chief medical text used in Europe for over five hundred years, as its author reigned as the continent's supreme medical authority until the seventeenth century.[14]

Ibn Haytham, described by some modern authorities as the greatest medieval student of physics, wrote about two hundred works on physics, astronomy, medicine, and mathematics. His most outstanding and remarkable work is *Optics*, which Roger Bacon used as the basis of his experiments in optics. He made significant contributions to the study of motion and discovered the principle of inertia, as well as carried out experiments on the rectilinear motion of light, the properties of shadows, the use of the lens, and the *camera obscura*. In addition, he studied spherical aberration and parabolic mirrors and realized that all the rays in parabolic mirrors are concentrated at one point, which makes it the best type of burning mirrors. Later on, he became interested solving the problems of two points in a plane of circle with lines meeting at a point at the circumference and making equal angles that lead to fourth-degree equations. He solved the equation with the intersection of hyperbole and circle in catoptrics, made curved lens and mir-

rors for his experiments, and, centuries before Issac Newton, applied the rectangle of velocities at the surface of refraction using the principle of least time. By placing a graduated cylinder in water to measure the angle of refraction and used chords above sine function, he uncovered what later became Snell's law – if only for small angles where the angles could be substituted for the sine.[15] Ibn Haytham also studied refraction through glass cylinders and spheres, tried to determine the Plano-convex lens' magnifying effect, determined the amount of atmospheric refraction by measuring the distance of a fixed star from the pole at the time of its rising and at its zenith with the help of an armilla, analyzed the phenomena of dawn and twilight and the apparent change in the size of the Sun and the Moon on the horizon, and determined that twilight ends when the Sun is 19º below the horizon.[16]

Perhaps the poet, philosopher, and mathematician Ghiyath al-Din Abul-Fath Umar ibn Ibrahim al-Nisaburi al-Khayyami, who became known in Europe as Omar Khayyam, the author of the *Ruba`iyat*, should also be mentioned. His few writings were on science and philosophy, such as *Al-Jabr,* which deals with cubic and quadratic equations and criticizes Euclid's theory of parallels and ratios. His criticism of Euclid's theory of parallels has been widely acclaimed as his most important work. As noted by Osman Bakar, David Eugene Smith was the American historian of mathematics who first brought attention to the importance of these works on parallel lines when he stumbled on them while searching for the relationship between mathematics and poetry.

According to Smith, al-Khayyam presented the first critical investigation of Euclid's theory of parallels in comparison with that of Girolamo Saccheri, whose work is considered the first significant step in non-Euclidean geometry. Smith established that Saccheri's first couple of theorems are essentially the same as some of al-Khayyam's propositions. Not only are the proofs and purpose for which they were put to use identical, but they even have the same way of lettering some figures. Al-Khayyam reexamines the fifth postulate of Euclid's theory of parallel line, which he describes as the "greatest doubtful matter in Euclidean geometry that has never been proved," and then attempts to justify it by proposing and proving altogether eight theorems. In doing so, he criticized Ibn al-Haytham, who introduced the concept of motion of a straight line segment, which he regarded as a "more evident" postulate that employs the property of equidistance. Al-Khayyam rejected this concept because, according to him, there was a clear distinction between Ibn Haytham's idea of motion of a line segment and Euclid's category of motions. He also questioned the possibility of

a whole line moving and yet remaining normal to a given line and thus the possibility of such an idea of motion serving as a basis for any proof of Euclid's famous postulate.

Although al-Khayyam faults some of Ibn al-Haytham's ideas, when dealing with the theory of ratios and proportions, he nevertheless borrowed from the latter's ideas and made several contributions to this theory, which includes the development of a new and more generalized concept of number by expanding the definition of Eudoxos through the use of continuous fractions as a means of expressing a ratio. He explains that irrational ratios (those with non-terminating continuous fractions) and true numbers (positive integers) can be placed on the same operational scale and, thus, almost admits the irrational to the status of a number.[17]

Based upon this small sampling of scholars, it is clear that Muslim involvement in science has a long history. Against this background, it is useful here to examine the Islamic philosophy of education and see whether what separates Islamic education from western education is the fact that one is religious and the other is secular. Or it is because one emanated from the Muslim world while the other emanated from the western world? It is also not really the contents of the syllabi and the curricular that make one Islamic and the other un-Islamic. Rather, the real difference between the two lies in their goals, epistemological foundations, principles, and philosophies.

According to Hisham Nashabi, the various terms used by Islamic scholars to refer to Islamic education are vague and do not reflect any Islamic theory of knowledge.[18] This debate is very important, because the entire Islamic educational structure rests upon it. Muslim scholars have used different terms to refer to Islamic education, such as *`allama* (he taught), *rabba* (he nurtured), and *adabba* (he trained). Such terminology reflects the comprehensiveness and richness of the Islamic science or theory of knowledge and explains the holistic perspective of knowledge as well as the process of its transmission. In Islam, *`allama* is used in reference to God and revealed knowledge to reflect the divine purpose in instructing and guiding humanity so as to ensure success in this world.

The term *rabba*, on the other hand, implies nurturing and grooming a person from the stage of nothingness, weakness, and incapacity to that of maturity, power, and competence. Hence it is used in the Qur'an in relation to raising up children through their formative years to adulthood (17:24 and 26:18). *Adab*, however, reflects the culmination learning and the transmission of knowledge – the perfect man (*al-insan al-kamil*), in the words of Muhammad al-Attas. To al-Attas, the *adib* (the well-educated, cultured, and

disciplined global scholar) recognizes the proper places of things in the divine scheme and has the ability to relate to all things that exist in a just manner (*al-`adl*) and with just and appropriate comportment (*al-adab*).[19]

The above explanation indicates that the Islamic educational structure seeks to produce a refined, cultured, and disciplined individual, one who can be instrumental in restoring Islamic leadership and scientific, moral, and spiritual values. The definition of *al-adib* or *al-`alim* (the learned and well-refined scholar) can therefore be located in the qualities and characteristics of a Muslim scholar. According to al-Ghazali, the scholar's autonomy and independence categorizes him/her as an *`alim al-su'* (the evil and uncultured scholar) or not. He upholds the scholar's commitment to knowledge regardless of remuneration, love for teaching, attachment to asceticism, and disdain for worldly attractions as sound qualifications of Islamic intellectualism.[20]

The Islamic View of Education

The goal of education, according to the Islamic understanding, is to lead humanity to become true *`ibad Allah* (servants of Allah), which is then translated into *khilafah*. Thus the search for knowledge is not essentially for material pursuits, but rather for divine pursuits and the attainment of perfection, orderliness, and balance in creation. Knowledge, therefore, is meant to serve humanity as part of creation.[21]

This is the crux of the matter, because Islamic education is a means of achieving a type of human development that is indispensable for eliminating backwardness and ignorance and must, while maintaining its essence and values from the Qur'an and Sunnah, also be rooted in acquired knowledge. Ishaq Farhan notes this point when he observes that Islamic education is comprehensive and not synonymous with religious education alone. In other words, Islamic education does not refer to an educational system that trains the body just for its survival, but to a system that trains the body and the soul in line with Islam's moral ethics. The Islamic educational system, therefore, seeks to impart all courses and branches of knowledge, whether they are secular (understanding the universe, human society, or nature) or religious (understanding the revealed sciences, which are based on Islamic principles, philosophies and objectives).[22]

Sayyid Ali Ashraf, first secretary of the 1977 Makkan Conference on Islamic Education, described this as the Islamic character of all branches of learning.[23] According to Tetsuya Kitaji, the objective of the Islamic educational system is to transform a student into an Islamic individual through the

process of imparting knowledge.[24] For instance, when we talk of Islamic banking as a branch of knowledge, we are, in effect, referring to imparting the knowledge of a modern banking institution that follows Islamic teachings, such as the principle of not dealing with interest. Likewise, when we talk of Islamic geology, ecology, or environmental science, we are discussing the study of these secular sciences from Islamic perspectives.

Islam states that Allah created human beings as His *khulafa'* (representatives) to work for the sustainable development of the universe, their *ummah* (community), and other *ummahs*. The concept of *khilafah* dictates that all people engender the wellbeing and happiness of humanity, animals, and other constituents of this world's biodiversity to ensure their happiness in the Hereafter. In creating this sustainable development, the ecosystem must be protected and its natural resources and creatures must be sustained in a wholesome manner. Hence, John Esposito opines that Islam's view of human responsibility is cosmic in proportion and that, as a result, people will be judged on the cosmic consequences of their actions.[25] According to a prophetic hadith: "There is none among the believers who plants a tree, or sows a seed, and then a bird or a person or animal eats of it, except that it is regarded as an act of charity."[26] Thus each Muslim is responsible for the sustainable use and cultivation of the ecosystem. The proper use of natural resources (e.g., water, land, trees, and air), as well as the proper disposition and utilization of the benefits from animals, plants, birds, insects, fish, and other mammals in the ecosystem, is a religious obligation. All of these creatures use the ecosystem like human beings, since they constitute *ummahs* in their own right (6:38).

This responsibility is not limited only to humanity's benefit, for it is also a right of all other members of creation. Thus the Prophet commands Muslims to sustain growth even if they can see no benefits coming from such actions. As one prophetic hadith states, when the Day of Judgment comes, the person who has a palm shoot in his/her hand should plant it, and whoever brings a piece of dead land to life will receive a reward. All of the ecosystem's natural resources and creatures contribute to nature's growth in one way or another. For instance, the soil or the land that Allah has laid down (55:10) is undoubtedly a source of life for everything and everyone. Just as water is both pure and an agent of purification, it is also a source of life for dead land and a drink for animals (25:48-50 and 80:24-32). It is the same with air, which is both pure and an agent of purification, as well as a source of life for all living things (15:22) and the movement of clouds (7:57). It is noteworthy that the Prophet forbids urinating in stagnant water, a well, along a path, in a shaded area, or in a dwelling.

Based on what has been said above, humanity is duty-bound to work for the sustainable development of all natural, human, and non-human resources and to ensure that none of them is degraded, wasted, or exploited. In short, Islam enjoins the type of sustainable development that can be attained only when people move beyond physical and material development in order to include moral and ethical development. This means that material advancement must not be just an end in itself; rather, realizing and promoting moral and ethical values in all material and physical development must be humanity's fundamental objective when it comes to using and exploring nature's resources.

The rejection or neglect of this philosophy, upon which Islamic science is based, has precipitated the ongoing crisis, chaos, and suffering in the world despite our scientific and technological advancement. Recognizing this truth and its connection with Islamic science and Islamic education, Muslim scholars agreed on the need to establish international Islamic universities for the academic study of Islam so that the dilemma created by the current bifurcation in science and education can be addressed as a whole. This bifurcation had led to graduates of secular institutions who can articulate such modern concerns as human rights, pluralism, globalization, and equality without having any knowledge of the traditional Islamic sciences, as well as graduates of traditional institutions who are well-versed in the traditional sciences but have no grasp the intricacies of the above-mentioned modern concerns. In an attempt to end this bifurcation, the "Islamization of knowledge" school sought to overcome the inadequacies of both institutions so that no more half-baked intellectuals and westernized Muslims who became authorities on Islam would be produced.[27]

According to Fazlur Rahman (d. 1988), these epistemological inadequacies can be overcome by nurturing the growth of a genuine, original, and adequate Islamic intellectualism,[28] an intellectualism that is the product of the now widely accepted "Islamization of knowledge" school. Such an Islamization seeks to bring modern science's epistemological and philosophical foundations in line with Islam's teachings and principles by calling for an all-embracing study of secular sciences and their applications based on revealed knowledge – in other words, the integration of revealed and acquired knowledge. Many Muslim scholars who have combined both types of knowledge are now on the scene. Described as "new intellectuals," they are distinct from the traditional ulama and the westernized Muslim intelligentsia. In their new definition of modernity, hence of education and Islamic studies, all knowledge is divine and religious and thus all chemists, engineers, economists, jurists, and so on are all members of the ulama.[29]

Out of this, as claimed by Amidu Sanni, came the idea to create a new kind of school, a hybrid of madrasah and university, the main goal of which would be to produce *homo Islamicus*, an educated modern Muslim who, whatever his/her field of expertise, would view what he/she sees and the knowledge that he/she acquires through the lens of Islamic teachings and principles. The products of this new movement would emerge as professionals who would be fully capable of showing Islam's excellence and capability to respond to the challenges of western-style modernity. This approach was adopted by IIUM; the International Islamic University, Pakistan; CUA; and other Islamic universities and applied to the scientific study of Islam based on an adequate conceptualization of Islamic epistemology and gave birth to the Islamization of knowledge movement.

Based on the need to recapture Islamic intellectualism, as defined and articulated at the first and subsequent conferences on Muslim education, IIUM, for instance, teaches traditional sciences (e.g., *usul al-din*, *fiqh*, Qur'an, and the Hadith literature) and secular subjects in an integrated curriculum. This resulting exposure to a broad, balanced, and holistic curriculum not only orientates the students toward memorizing and reporting the Islamic theoretical heritage, but also toward methodological gathering, analyzing, questioning, and critiquing of Islamic texts and contemporary issues. The curriculum enables them to relate the sacred to the profane, theory to practice, and the religious to the secular.

At IIUM, the Islamization of knowledge methodology requires all students to major in one of the traditional sciences and minor in any of the social sciences or humanities. For example, they may combine Islamic law with common law or specialize in finance, which includes Islamic finance as part of the core courses. These major and minor courses constitute core university requirements designed to realize IIUM's well-defined goals, vision, and mission. The university seeks to become a center of excellence that integrates revealed knowledge in all disciplines in order to restore the rich Islamic heritage and its leading role in all branches of human knowledge, as well as to commit staff members and graduates to revitalizing the Islamic concepts and traditions of learning and seeking knowledge as an act of worship. Its teaching and learning processes seek to inculcate moral, spiritual, and scientific values through integration, Islamization, internationalization, and comprehensive excellence.[30]

The experience at CUA is similar, for it is currently teaching Islam both as a general university course and with other subject combinations. Students are offered a B.Sc. degree in the Islamic religious studies program with com-

puter science, banking and finance, actuarial science, and other subjects. Upon their graduation, they are awarded combined honors degrees in Islamic studies with any of the above-mentioned subject disciplines. These combinations are designed to produce scholars who possess a professional and basic knowledge of their second field of study. Consequently, students who have registered for the B.Sc. combined honors in Islamic studies will be exempted from all general courses on the philosophy of Islam and beginners' Arabic, for they are expected to study such subjects as part of their core courses in Islamic studies. This brings us to the general courses on philosophy of Islam and beginners' Arabic that, in addition to the above, have been taught at the nascent CUA for four academic sessions. In fact, the university has just graduated its first student class. "Philosophy of Islam 1 and 2" and "Arabic for Beginners 1 and 2," which constitute the cornerstone of the university's vision, philosophy, and mission, are taken by all students.[31]

In addition to attending classes, during which the students are exposed to Islam's principal teachings in order to develop the skills required for a critical study of the Islamic texts and applying Islam in their everyday lives and professions, the students, the majority of whom are born-or-raised-in-Nigeria Muslims, are able to relate what they learn to what they experience in their various religious and cultural settings. Most of the recent graduates have related that the teaching and learning of this broad and intellectual Islamic curriculum in the "Philosophy of Islam 1 and 2" classes grounded them in issues affecting Islam, modernity, and modern technology.

In general, the courses provided them with a detailed study of Islam, its law and sources, Sufism, jihad, textual study of the Qur'an and Hadith, and Islamic thought (focusing on major developments in Islam) from the time of the Prophet to the present day. The philosophy courses also exposed them to Islamic practices in a multicultural and multireligious setting. Students say that they can now better engage with global issues affecting Islam and Muslims by critically using the tools of philosophy, sociology, psychology, theology and other multidisciplinary approaches that are essential for the study of Islam and inter-religious dialogue, Muslim-Christian relations, feminism, gender studies, Islamic history, and so on.

The vast majority of CUA students are Muslim. They are mostly born-or-raised-in-Nigeria individuals who, to use Seyyed Hossein Nasr's categorization, do not hesitate to break Islamic injunctions concerning such questions as sexual behavior or drinking alcoholic beverages and who, while modernized, still concern themselves with Islam and its history.[32] They study at CUA largely because of their parents, who want them to be trained in

Islam in addition to their professional training. This explains why their attachment to Islam, again quoting Nasr, remains little more than a name and is devoid of any intellectual and spiritual truth.[33]

Through the opportunities provided at the university, these modernized Muslim students state that they can relate what they learn to what they experience in their various religious and cultural settings. They are taught in the classrooms and also practically by experiencing Islamic rituals and practices in the university and other communities. The "Philosophy of Islam" classes introduce them to Orientalism, in which they examine the issues of otherizing and insider/outsider problems associated with academic study of Islam.

Against the background of the Muslim Students Society of Nigeria (MSSN), which is very strong in Nigeria[34] and with which most students come into contact during their academic career, students are taught to recognize popular assumptions and stereotypes about Islamic teachings and the difference between Islamic teachings and popular biases about them that affect a non-Muslim's perception of Islam. One such assumption that has been propagated among MSSN members is the non-importance of educating women.[35]

The students, therefore, learn to use their insider/outsider perception of Islam and Muslims as a tool with which they can question cultural beliefs and lenses in order to see the positivity of the other side. They learn to move beyond their cultural, media, western, or traditional lenses of viewing Islamic teachings, not to mention their consequent biases, likes and dislikes, and to see the creativity, novelty, and diversity that can be brought to bear upon them by different practitioners, communities, generations, and age groups. In other words, they begin to perceive the dynamics and intricacies involved in interpreting what is *halal* or *haram*, obligatory or voluntary, and recommended or frowned upon in different contexts. Thus they learn how stereotypical images of Islam and Muslims can be framed, as well as Orientalized and otherized.

One such image is that of Muslim women who wear the *niqab*, hijab, or even the ordinary Islamic scarf. As a result, students realize that it is wrong to see a sea of Muslim women covered up, as there are Muslim women who do not cover. The fact that some of them cover for non-political reasons reveals the error of interpreting any of these methods of covering as a political, cultural, or religious statement. It is pure ignorance of the complexities of Islamic practice to imagine that women who cover do so for similar reasons. Not only is such a notion ethnocentric, as similar reasons could be erroneously provided for women who expose their skin, this lumping or

tucking of Muslims into one large group or another or a single package (as is currently prevalent in the MSSN) contradicts the complexity of Muslim practices witnessed today.[36]

This elective approach must be employed to select from both the traditional Islamic ethical principles and modern secular sciences that which is most sound and correct, and then used to weld both types of knowledge together to form an Islamic intellectual structure. This approach, which will expose students to a broad, balanced, and holistic curriculum, will inculcate in students the ability to relate the sacred to the profane, theory to practice, and the religious to the secular. The goal is to integrate revealed knowledge into all disciplines in order to restore Islam's rich heritage and leading role in all branches of human knowledge and its commitment to revitalizing Islam's ethical concepts and traditions of learning and seeking knowledge as an act of worship. This is how Islamic universities can help modern science stop the degradation, destruction, and exploitation of the environment, natural resources, and other constituents of biodiversity. Given that many professionals, despite their acclaimed technical, economic, and scientific achievements, have brought about such damage due to their unethical behavior, instilling ethics within them will help solve these very problems.

For instance, Abdul Kabir Solihu has shown that natural disturbances, which are erroneously depicted by some disaster analysts as "wicked" disasters, aside from alleviating the hunger and thirst of all creatures and endowing the universe with the capability to sustain human, non-human, and all other constituents of the universe's needs, do not equal the death toll from man-made disasters. Even such occurrences as death, a divine natural means of maintaining balance in the world, do not equal the death toll from man-made disasters. When human beings tamper with the natural means of maintaining balance in the world and the sustainability of all beings, catastrophic disasters of unimaginable magnitude are inflicted on the entire environment and its differing and teeming communities. This can be seen in the fact that such man-made disturbances as war, weapons of mass destruction, toxic waste, pollution, disease, global warming, desertification, soil degradation, and erosion are now gradually destroying the ecosystem's equilibrium. The emergence of modern technology and industrialization marked the beginning of the modern era's ecological problems. The inventions of science have made war, a potent medium of earth degradation, even more horrible and destructive, as the atomic bombing of Hiroshima and Nagasaki made clear.[37]

This unwholesome development for the entire biosphere is the fallout of an unethical mindset. Similar problems have been identified in the financial

industry. For example, the failure of large corporations can be traced to financial fiascos or result in huge financial losses and the erosion of public confidence in the financial system. The scandals that have rocked the financial markets have enabled many chief executive officers and managers of various firms to make huge fortunes at the expense of their clients, some of whom lost their life savings. All such things are indications of unethical conduct in financial markets.[38] In addition, since these scandals have called the ethics of top management's financial behavior into question, there is a serious need for ethical behavior on the part of professionals in the financial industry, since it cannot function without transparency, justice, and prudence. For this reason, in the remaining sections I will assess Islamic teachings as they affect professional ethics, the syllabi's contents and contexts, and the curricula used in Islamic universities like IIUM and CUA.

Ethics and Morality

While the terms *ethics* and *morality* are used interchangeably in daily conversation, ethics (from the Greek *ethos*) refers to a set of behavioral precepts, principles, and concepts that are central to the life of a community, people, and race. Morality, on the other hand, is derived from the Latin *mores*, which refers to the peoples' conduct, practice, and custom.[39] In short, ethics is the theoretical study and reflection of morality; it asks value-laden questions so as to establish normative concepts and precepts for morality or human behavior and conduct.[40]

Muslim scholars have used different terms to refer to both ethics and morality: *khulq* (conduct), *tadrib* (training), and *adab* (etiquete).[41] These words reveal the comprehensiveness, richness, and holistic perspective of ethics and morality in Islam. *Khulq* describes a person's innate character and behavior, just as *khalq* denotes its outer attributes (e.g., shape and physiognomy). In this sense, Prophet Muhammad used *akhlaq*, the plural form of *khulq*, when he declared that part of the divine purpose in sending him as a prophet was to perfect good morals by letting his people observe his personal conduct.[42] *Tadrib* and *adab*, on the other hand, imply disciplining, training, nurturing, and grooming a person in his/her mind, soul, and outward disposition. Hence Hamilton Gibb considers *adab* to be a synonym of Sunnah,[43] which accords with the hadith narrated by A'isha that the Prophet's *khulq* represents the Sunnah as the Qur'an in practice.[44]

One of the fundamental teachings of Islamic ethical behavior is the concept of goodness. *Khayr*, *birr*, and *ihsan* are some of the terms for an action,

utterance, and/or behavior that benefits creation at large (2:177 and 180; 3:192). Based on these verses, goodness implies that faith and piety are meaningless unless they cause a person to refrain from harmful, and therefore undesirable, acts to oneself and to others. As a result of this understanding, averting harm takes precedence over acquiring benefit, and so all human actions that lead to the above-mentioned problems and harm others (e.g., economic fraud and scams, environmental damage, and pollution) are forbidden regardless of the personal gains that accrue to their perpetrators.

Given that ethics asks value-laden questions and is grounded in logic and reason, it is considered a branch of philosophy. Although many scholars have argued that teaching ethics must be left to philosophy and not identified with any religion, the unethical conduct of many professionals today show that it is very difficult to remain incorruptible and moral in moments of conflict and selfish interests. No matter the regulations put in place, many people would refuse to cheat and defraud if they had even an iota of doubt that they would be caught. Thus, moral precepts can best be inculcated through religion and faith.

Moreover, it is incorrect to claim that logical and critical methods are taboo in Islam, for while this might be the case in some parts of the Muslim world, it is not the case with Islam itself. Islamic scholarship has always upheld intellectual honesty, integrity, and objectivity as parts of its essential and core tradition. Therefore, contemporary Islamic scholarship must confront theological postulations on larger sociopolitical, economic, and environmental issues (viz., feminism, peace and conflict studies, citizenship, environmentalism, inter- and intrareligious dialogue, and so on). This is in line with the methods of deduction employed by those Muslims who first developed Islamic intellectualism so many centuries ago. These methods include *jadal* (debate and dialectics) and *munazarah* (disputation and intellectual discussion), which provided the intellectual atmosphere for the growth and proliferation of over a hundred schools of thought. Most of them, however, died out when they ceased to produce scholars who could defend their jurisprudential differences (*khilaf*).[45] The sources of the Shari`ah (*masadir al-Shari`ah* or *usul al-Shari`ah*) include legal deduction (*ijtihad*) as sanctioned by the Prophet himself when he appointed Mu`adh ibn Jabal governor of Yaman. In addition, Umar ibn al-Khattab also gave the judge Shuray al-Kindi a similar sanction when he ordered him to find what is obvious to him in the Qur'an before ruling on any matter and not to ask anybody about it.[46]

There is, therefore, a need to keep philosophy in the curriculum of the academic study of Islam. The traditionalist al-Ghazali, although credited

with routing the philosophers, supported what can be termed *tafsir bi al-istinbat* (the facilities of deduction or personal opinion), which today are viewed as the modernists' prerogative. He upheld the deductive method because most of the sayings of Ibn Abbas and Ibn Mas`ud were based on these two facilities, which caused them to sometimes hold irreconcilable views on various verses. Yet the Prophet asked Allah to grant Ibn Abbas a clear comprehension of Islam and knowledge of various methods of interpretation.[47] According to Nasr, al-Ghazali used this same method to defend Islam against the philosophers themselves, and so they can be used to protect Islam's truth and repel all attacks launched against it.[48]

Conclusion

Muslim contributions to science, made during Europe's medieval age, have been many and varied. The continuous – and largely man-made – destruction of both human and natural resources has posed new challenges to Islamic universities. One of the ways to meet such challenges, given their status as specialized institutions with niche areas, is to focus on teaching Islamic professional ethics.

The experience of IIUM and CUA in the context of our interest in this article – the contribution of Islamic universities to ethics – shows how students are being groomed to practice what they learn in a practical manner. It must be clearly stated, however, that offering ethical values in the curricula is only half of the solution; other factors that are required to make these ethical elements effective and work in the university, which have yet to be addressed, include the commitment of the university's staff members and managers. For instance, all students are expected to partake in various leadership and training sessions dealing with how to apply what they have been taught in real life. But because these are extra-curricular activities, the attitudes of the university's staff members and managers will determine the extent of their success. Each staff member and manager can play a significant role in encouraging students to behave ethically in all of their academic, formal, and official, as well as extra-curricular, unofficial, social, individual, and informal, interactions with fellow students, by ensuring strict and firm development and the continual cultivation of all ethical codes.

The first step of Islamic universities in this direction, therefore, is to educate the students' hearts and minds in order to awaken their Allah-consciousness and awareness of their responsibilities to humanity's welfare and human civilization starting with their selves, families, relatives, and

communities. These universities must also enable students discover who they are, where they live, and how to live a life of godliness. One important factor noted in the teaching of Islamic ethics is the inclusion of ethics, morality, logic, philosophy, and critical thinking in their curriculum, as such a step has contributed to the students' professional, moral, and ethical training, regardless of their eventual profession.

This approach affords students the opportunity of being brought up with Islamic ethics and immersing themselves in Islamic practice as well as sound scientific, social science, business education, and other fields.

Endnotes

1. Kamaldeen Balogun, "Islam and World Peace," 41st Inaugural Lecture (Ago-Iwoye: Olabisi Onabanjo University, 2006), 4-10.
2. Ibrahim Olatunde Uthman, "Towards Making Islamic Scientific Worldview Relevant to Contemporary Western Science and Technology," in CD Conference Proceedings of International Seminar on Islamic Science and Technology organized by Centre for Islamic Studies and Social Development, University Technologi Malaysia, from 18-19 Mar. 2008, pp. 1-7.
3. Bernard Lewis, *The Muslim Discovery of Europe* (New York and London: W.W. Norton and Co., 1982). Cited in ibid.
4. See D. M. Dunlop, *Arabic Science in the West* (Karachi: Pakistan Historical Society, 1958). Cited in ibid.
5. Seyyed Hossein Nasr, *Science and Civilization in Islam* (Pakistan: Science Academy, 1968). Cited in ibid.
6. Mohamad Shamsher, *The Chartered Secretary of Malaysia* (Australia) 54, no. 7 (March 2005).
7. Mohammad Shamseher, *Journal of Chartered Secretaries* (Australia) 54, no. 7 (August 2002).
8. Kamil K. Oloso, "Contributions of Muslim Scholars to Western Education" (paper presented at the IMANAMIS Education Conference at the Islamic Mission for Africa Centre, Abeokuta, 24-25 Feb. 2006).
9. A. Mustapha, "Sabotage in Patronage: Islamic Education under Colonial Rule in Nigeria," *Journal of the Nigerian Teachers of Arabic and Islamic Studies* 6, no. 2 (2001).
10. See Muhammad Iqbal, *The Construction of Religious Thought in Islam* (Lahore: Sheikh Muhammad Ashraf, 1975).
11. Maurice Bucaille, *The Bible, the Qur'an, and Science* (Indianapolis: American Trust Publications, 1979).
12. Nasr, *Science and Civilization in Islam*.
13. See ibid and N. Ahmed, *Muslim Contribution to Geography* (Lahore: Muhammad Ashraf, 1947).

14. Osman Bakar, *Tawhid and Science: Essays on the History and Philosophy of Islamic Science* (Kuala Lumpur: Secretariat for Islamic Philosophy and Science, University of Malaysia, 1991) and Nasr, *Science and Civilization*, 212.
15. Ibid.
16. Ibid.
17. Ibid.
18. Hisham Nashabi, "Islam and the Liberal Tradition," in *The Liberal Arts and the Future of Higher Education in the Middle East* (Beirut: American University of Beirut, 1979), 34.
19. Muhammad Naquib al-Attas, *The Concept of Education in Islam* (Kuala Lumpur: ISTAC, 1991), 22.
20. Cited in Ibid.
21. Ibid.
22. Ishaq Farhan, "Towards the Construction of a Contemporary Educational Theory," in *Education Conference Book* (Amman: Islamic Studies and Research, 1991), 15-16.
23. Sayyid Ali Ashraf, "Islamic Education: Evaluation of the Achievements of Previous Conferences," ibid., 74.
24. Tetsuya Kitaji, *Islamic Versus Modern Western Education* (Japan: Institute of Middle Eastern Studies, International University of Japan, 1990).
25. John L. Esposito, *Islam: The Straight Path* (Oxford: Oxford University Press, 1994).
26. *Sahih al-Bukhari* cited in Uthman, *Towards Making Islamic Scientific Worldview*.
27. Omid Safi, ed. *Progressive Muslims on Justice, Gender, and Pluralism* (Oxford: Oneworld, repr. 2004), 19-20.
28. Fazlur Rahman, *Islam and Modernity* (Chicago: University of Chicago Press, 1982), 1.
29. Amidu Sanni, "Rethinking and Repackaging Islamic Studies" (paper presented at the International Conference on New Horizons in Islamic Area Studies, Malaysia 2008).
30. IIUM, *Undergraduate Prospectus* (2004), 9-10.
31. See *Crescent University Students Handbook* (2006).
32. Seyyed Hossein Nasr, *Islam and the Plight of Modern Man*, rev. and enlarged ed. (USA: ABC International Group, Inc. 2001), 137 and 186.
33. Ibid.
34. Ibrahim Olatunde Uthman, *Muslim Women of Nigeria and the Feminist Discourse of Shaykh al-Albani* (Malaysia: International Islamic University, 2008), 5, 114, and 115.
35. Ibid.
36. Ibid.
37. Solihu Abdul Kabir Hussain, "Making Sense of Natural Disasters: An Islamic Hermeneutics of Malevolent Phenomena in Nature and Its Implication for

Sustainable Development," *American Journal of Islamic Social Sciences* 24, no. 1 (winter 2007), 46-72.

38. Shamsher, *The Chartered Secretary of Malaysia*.
39. Ibrahim Olatunde Uthman, "The Contributions of Islamic Universities to Professional Ethics: A Case Study of the International Islamic University Malaysia and Crescent University Abeokuta," in *Conference Proceedings of International Conference on Islamic Professional Ethics and Education 2008 (ICEPEE' 08)* organized by Kulliyyah of Engineering, International Islamic University Malaysia held from 13-15, May 2008.
40. T. P. Hughes, *A Dictionary of Islam* (Lahore: Premier Book House, 1885) and Muhammad al-Ghazali al-Misri, *Muslim Character* (Jeddah: King Fahd National Library, 2001).
41. Ibid.
42. Ibid.
43. Ibid.
44. Ibid.
45. G. Makdisi, *The Rise of Colleges: Institutions of Learning in Islam and the West* (Edinburgh: Edinburgh University Press, 1981), 105-33, 4.
46. Muhammad Abu Zahrah, *Usul al-Fiqh*, as quoted in Mustapha Hussain Isma'il, *Shari'ah Sources and the Defence of Women's Rights*, ed. Jibrin Ibrahim, *Sharia Penal and Family Laws in Nigeria and in the Muslim World* (Zaria: Ahmadu Bello University Press Ltd., 20040, 143.
47. M. Amin Abdullah, "University Teaching Islamic Studies, Humanities and Social Sciences at the International Level: An Integrated Perspective" (paper at the International Seminar on University Teaching of Islamic Studies, Prince of Songkla University, Thailand, 19-20 Mar. 2005).
48. Seyyed Hossein Nasr, *Traditional Islam in the Muslim World* (London: Kegan Paul International, 1987), 204-24.