Model for the Development of Science and Humanities Curriculum in Islamic Universities

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Abstract

This paper elaborates the model for the curriculum development of science and humanities for Islamic university. The model is based on the theory of worldview, the process of which begins from learning life structure, world structure and extends to the concept of knowledge, human and value. The last three concepts are sought at university level, yet the curriculum at this level should be directed, at the first place towards scientific mentality. Therefore, students should acquire skills and know-how as well as critical thinking to reach such mentality, rather than to give huge load of courses unnecessarily. With those principles action plan for the curriculum development of our universities should be as follows: Two or three courses at introductory level; Two or three required courses in sub-fields of the students; Two or three elective course in the field of the student; Two courses in Islamic scientific tradition; One or two courses in the methodology and logic of Islamic scientific tradition; Two courses in the philosophy and adab of Islamic scientific tradition; The rest are elective courses such as logic, and introductory courses in philosophy and sociology. To be conversant of Islamic scientific tradition, for example student should be given a good grounding in the history of Islamic scientific tradition. The course to be given for this purpose is not a simple history of science in Islamic civilization; it is rather a course which is designed to teach the historical continuity of Islamic scientific tradition.

Makalah ini mengkaji model pengembangan kurikulum sains dan humaniora. Model ini berdasarkan teori worldview, yang prosesnya bermula dari pembelajaran tentang konsep hidup, konsep alam dan meluas menjadi konsep ilmu, manusia dan nilai. Tiga konsep yang terakhir di pelajari di tingkat universitas, dan karena itu kurikulum pada tingkat ini harus diarahkan pada mentalitas ilmiah. Agar memperoleh mentalitas ilmiah mahasiswa harus mendalami skill dan pengetahuan teknis serta berpikir kritis,

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ketimbang harus diberi mata kuliah yang banyak yang tidak perlu. Dengan prinsip-prinsip itu program kerja untuk pengembangan kurikulum hendaknya ditetapkan sebagai berikut: Dua atau tiga mata kuliah pada tingkat pengenalan; dua atau tiga mata kuliah wajib dalam sub-bidang yang didalami mahasiswa; dua atau mata kuliah pilihan dalam bidang yang dipilih mahasiswa; dua mata kuliah dalam tradisi keilmuan Islam; satu atau dua mata kuliah dalam metodologi dan logika dalam tradisi keilmuan Islam; dua mata kuliah dalam bidang filsafat dan adab dari tradisi keilmuan Islam. Sisanya, adalah mata kuliah pilihan seperti logika, kuliah pengantar dalam filsafat dan sosiologi. Agar menguasai tradisi keilmuan Islam, misalnya mahasiswa harus diberi dasar dalam sejarah tradisi keilmuan Islam. Kuliah yang perlu diberikan untuk tujuan ini bukan sekadar sains dalam peradaban Islam, tapi kuliah yang didesain untuk mengajarkan sejarah keberlangsungan tradisi keilmuan Islam. Selain itu mahasiswa perlu diajar tentang metodologi dan logika dari tradisi keilmuan Islam, dan juga mata kuliah tentang metodologi dan logika serta adab dalam tradisi keilmuan Islam dan filsafatnya.

Keywords: worldview, scientific conceptual scheme, curriculum, systematic learning.

Introduction

In order to develop a humanities and sciences curriculum in universities of the Muslim world we need to analyze the nature of education, which can broadly be understood as a “process of acquiring knowledge.” For in the actual sense education consists of learning and teaching. The former is acquiring knowledge which is learning and the latter is imparting knowledge which is teaching. In that case both learning and teaching are processes of knowledge. But since the aim of education is learning then our attention must concentrate on this aspect. Therefore, if we analyze the nature of learning as the process of acquiring knowledge we may at the same time discover the real nature of education. This way I am hoping at the same time to develop a more effective method of developing a science and humanities curriculum.

The process of acquiring knowledge has two aspects: One is external, the other is internal. What we mean by the internal aspect of the process of acquiring knowledge is epistemology, which, as a branch of philosophy, investigates the operations of our faculties employed while acquiring knowledge. The external process of acquiring knowledge is on the other hand what we call “learning” investigated in the discipline called “education”. External process as education includes instructor, teaching methods, other means utilized in teaching.
and above all the subject of discussion in this context curriculum. Therefore, I shall concentrate in this paper on curriculum development in sciences and humanities from our own perspective. For, it is perspective that changes an outlook and gives the activity its own color, which is in this case Islamic.

Learning as an external process of acquiring knowledge can be in two ways: One is natural learning, which is attaining knowledge mainly by the use of our faculties of learning and senses. The most effective method in this kind of learning is trial and error. The other kind of learning is systematic knowledge acquisition. It is this second kind of learning that we should consider as real education. Now we come to a point where we have to recognize the role of epistemology in education because education as systematic learning is an external process acquiring knowledge, which is based on the internal process of acquiring knowledge. For, the internal process of acquiring knowledge as learning is mainly the operations of our mind and other faculties of learning while we try to acquire knowledge. This means if we know how our faculties of learning operate then obviously we can teach the students more effectively. In that case the internal process of acquiring knowledge can give us more effective methods of teaching and thus we need to utilize it. But this aspect is discussed in epistemology, so I will try only to assume a theory of knowledge on the basis of which I shall attempt to develop a theory of education that may guide us in determining the challenges we face today in higher education.

Our explanation so far reveals that a theory of education consists of the internal process of acquiring knowledge on the one hand; and the learning subject (the human being), which represents the external process including teaching on the other. The former includes an analysis of the internal processes which take place in the mind and learning faculties of the learning subject (the human being). The latter includes the efforts of systematic learning and teaching. Let us then try to analyze these structures in order to pinpoint the place of higher learning in education so that we can discover our challenges and new prospects.¹

The Internal Process of Learning

The internal process of learning is the operations of our faculties which we use in order to acquire knowledge. These operations begin at the level of objects of knowledge and ends at the level where their complete concepts, ideas and knowledge are transferred to the mind. In this context, when we say “complete” we do not mean that in this process we exhaust the knowledge of that object. What we mean is that for that specific process the complete idea, concept and whatever is aimed at learning is achieved. This process can be natural or systematic. We shall try to understand these processes that will give us an effective method of teaching to be utilized in any education.

a. Natural Learning

The natural process of learning or of acquisition of knowledge is the personal trial of an individual in acquiring knowledge. Usually this is the way we first begin to learn things when we arrive to this world. The main method of natural learning is trial and error. As a result of this process a worldview is formed in the mind of the learning subject. Initially this worldview is simple and as such has only two structures: Life Structure and World Structure. The former starts to be formed as soon as we are born. In this first experience of life it is extremely hard to determine what will be the first that we learn. In other words, what is our first experience that is converted into a piece of knowledge? We can, on the other hand, identify more or less what kind of knowledge this mental content is; for example, it cannot be an abstract idea, or a philosophical notion and the like. It will be a kind of knowledge that pertains to our life at that time. Since we are naturally inclined to preserve our life, most of our experiences will be related to the preservation of life, such as finding and choosing certain food and developing habits of how to attract the attention of others to make food available and so on.

Therefore, in our early ages we naturally (fitratat\textsuperscript{2} have such experiences available to our mental consciousness and it is these

\textsuperscript{2} Whenever I use the term “nature” or “natural” I mean the concept of our scientific tradition “fitrah.

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experiences that are converted into knowledge. What we call Life Structure is the knowledge that is available for us in this way and is primarily related to our biological and daily life. In that case Life Structure in our worldview includes most of our daily habits related to the preservation of our life. This Life Structure becomes more refined and sophisticated as we add to it what we learn from our social environment. In this way it begins to include many of our cultural habits as well, such as habits of eating, our social culture, and the ways of daily behavior, manners and customs. We call it ‘structure’ because our mind forms it according to its natural (fitri) rules and principles explained in such disciplines as logic and epistemology. For this reason, knowledge gathered in this structure is not a hodgepodge gathering of experience in our mind; it is rather an orderly unity according to certain rules and principles. Life Structure is, therefore, such a coherent mental unity which makes up the total contents of our mind in our earliest life onwards enriching itself until adulthood according to the natural rules and principles of the mind through its social and physical surrounding. It is this internal process that we call natural. When there is interference from either us or our surrounding then learning becomes systematic.

I would like to illustrate the natural internal process of learning with a concrete representation. We have a digestive system which is totally biological. Yet, if our capacity to attain knowledge is called “knowledge system” following our naming of the “digestive system”, then it actually resembles our “knowledge system”. Our digestive system too has internal and external processes, both of which also have “natural” and “systematic” ways, although they may not be called as such in anatomy. The former is the process which takes place after the food is put into the mouth; and the latter is the process which takes place during the gathering and preparing the food before it is eaten. Hence, the internal process of digestion is like the internal process of learning or of acquiring knowledge, namely the process that takes

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place after the “information” received from the objects of knowledge is put into the mind. The external process of digestion is a good illustration to the external process of learning or of acquiring knowledge, namely the process that takes place before the “information” received from the objects of knowledge is put into the mind. It is clear that in all these processes there are natural and systematic procedures.

b. Systematic Learning

As far as the internal process of learning is concerned there is no difference in natural or systematic learning. Here the difference comes because of the external applications of our learning faculties and as a result in the mind a more systematic worldview is formed. This makes a significant change in learning. For, as soon as we begin to form a mental conception of a natural experience, which we had from babyhood onwards, we will begin to act no longer out of the natural instincts alone, but also out of the mental content that we have acquired which we have called ‘Life Structure’. The more sophisticated the Life Structure is, the more conceptual becomes the experience and thus the more we act out of our mental frameworks. This means we are now acting on the basis of our knowledge which we have thus far acquired and hence knowledge formed thereupon is more systematic. In such a conceptual Life Structure we may be able to distinguish certain elements, which we call ‘mentality’. A mentality is actually an understanding or conception of certain things, living types, and facts of life and of the world. 4

As we grow these mentalities are developed according to our personality, mental abilities and the kind of education we receive. Each mentality begins to develop through the education we receive into a structure and thus can be termed ‘sub-structure’. These mentalities are so coherently related to each other that together they form the totality of the Life Structure. Then, we begin to arrange our life according to our own Life Structure, which is the totality of the contents of our mind thus far in our life. Since, as a total unity, the mind reflects

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4 Alparslan, Acikgence, _Scientific Thought and its Burdens_ (Istanbul: Fatih University Press, 2000), 71
all the ideas we have thus far formed in our mind, its contents as the Life Structure will also reflect our attitude for life and understanding the universe in general. Our worldview at this stage has only a Life Structure which reflects our conception of the universe, such as the meaning of life, the origin of existence, human destiny and so on. As such it includes our identity as well. Life Structure and worldview are the same at this stage.

On the other hand, as we grow up, gradually develops in our worldview certain conceptions concerning the world we live in; first, certain fundamental questions arise in the mind, such as the meaning of life, from where we have come and where we are going to. As we try to answer, or find answers to these fundamental questions, a conception concerning the world and things around us is formed. As this conception begins to be more sophisticated through our education, it gradually forms a clearly discernible structure in the mind, which can be distinguished from the Life Structure. This new structure first forms a mentality within the Life Structure. If however, the society has a good educational system endowed with knowledge then these mentalities within the Life Structure will continue to become more and more sophisticated. But if it can be fully developed it provides well formed ideas, doctrines and even scientific opinion concerning the world we live in; hence, it is apt to call it ‘World Structure’. As soon as this new structure is established within the worldview, it begins to function in conjunction with the life-structure and vice versa.

If there is a good education based on knowledge and in fact more specifically scientific knowledge in the community then the worldview in our mind develops further. Usually there are certain concepts in our worldview that dominate our life. It is possible to reduce these concepts into only five fundamental ones: life, world, knowledge, human and value. A fundamental concept is one which forms a complicated understanding and a mentality in our mind which directs us to a certain behavior in life and society. As such these concepts can

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be characterized as “doctrinal concepts” because each one of them may constitute a specific well developed doctrine which determines our worldview.\footnote{Alparslan Acikgence, \textit{Islamic Science Towards Definition}, (Kuala Lumpur: ISTAC (International Institute of Islamic Thought and Civilization), 1996.} The development of these concepts depends upon the type of education a person receives. We should be able to see here that at least two doctrinal concepts grow into structures in our worldview as a natural internal process of learning; Life and World Structures.

But if the education is scientific then the concept of knowledge can also acquire a doctrinal characteristic and as such formed into a “Knowledge Structure”. In the same way both human and value concepts can also develop into doctrinal concepts and as a result form the structures of Man and Value. What is important for an educational philosophy is the process in this development. Two structures, namely, Life and World Structures develop as a result of the natural internal process of learning or of acquiring knowledge. We must however realize that no structure is perfect in relation to knowledge unless it is developed through systematic process of learning. That is why the other three structures, Knowledge, Human and Value, can develop only if there is a systematic process of learning. Therefore, we shall build our educational philosophy on the system of the development of a worldview. Before we do this however it is important to clarify further our concepts of structures and the way they lead us to certain behavior in life. In fact we need to prove that it is these concepts in our worldview that guide us in our actions.

First of all, we need to show what other concepts are restored in these structures. As we shall utilize the Knowledge Structure in our model of science curriculum we must see that it includes within itself the key scientific terminology and all other concepts of technology which may be derived from these concepts. The network of the key scientific terminology may be called “Scientific Conceptual Scheme”, which will be dealt with briefly below. In the Value Structure we may find moral concepts, ideas, doctrines, and depending on the kind of
worldview, we may also have our religious and legal conceptions. In the Human Structure, on the other hand, we have our conceptions of ourselves, as well as of the society and the societal organization. All structures of a worldview operate in relation to each other. None of them can operate independently; hence, our treatment of them independently is only a logical analysis of a worldview. Otherwise, it is not intended to establish each structure independently.

Secondly we may give a concrete example in order to illustrate the structures of a worldview on the basis of the Islamic worldview. Since the Life Structure is grounded in human biology, it will have the most common elements with all other worldviews, and as such the Life Structure of the Islamic worldview is its aspect that is most dominant in the Muslim local cultural activities. The World Structure is that aspect of the Islamic worldview which includes the most fundamental elements, such as the idea of *tawhid* (God’s Being and Oneness), prophethood, resurrection and the ideas of religion and the hereafter, *akhirah*. We do not mean that these are the only fundamental concepts of the Islamic worldview because each structure by itself represents a doctrinal element which includes within itself many other fundamental Islamic key terminologies.

But the extensions of these key concepts and terminology constitute substructures; hence, there lie many substructures within the basic structures of the Islamic worldview which may not be so fundamental and as a result differences of opinion in those substructural elements can be allowed. As an extension of the World Structure, Knowledge Structure is also a fundamental doctrinal element, which is represented by the umbrella term ‘ilm. This structure includes within itself the key scientific terminology of Islamic science which may be called ‘Islamic scientific conceptual scheme’. The Value Structure in the Islamic worldview, on the other hand, includes moral, ethical and legal practices. But since the concept of law; namely, *al-"

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fiqh, in the early Islamic worldview is closely linked with the World Structure, it naturally included religious law, which cannot be devoid of moral content. Hence, law, religion and morality are manifested as an integral part of one structure. This conceptual understanding of law, religion and morality never brought about a sharp distinction between these three substructures. Finally, the Human Structure is represented within the Islamic worldview by the concepts of khalîfah and ummah. As such this structure manifests the Islamic understanding of man and society, which is totally grounded in the World Structure because, again, even these conceptions themselves are derived from the concepts of tawhîd, prophethood, religion and âkhirah.

Thirdly, each structure in a worldview has a specific function in life and in human activities. This point can be explained from another perspective as well; let us assume a worldview in which the Knowledge Structure is not discernible as a manifest mentality. In such a case, no scientific activity will ensue from the individual having such a worldview. There will not be in that worldview any scientific concepts that can form a scientific framework for the mind to work in. As a result, there will be no scientific attitude, nor any scientific tradition that can support such activities. In fact, if there is no Knowledge Structure within a worldview, then that worldview can only be analyzed into its Life and World Structures.

For it is the scientific activity which manifests other structures as analyzable units of a worldview; if there is no such activity those structures cannot be developed to such an extent that they become manifest in their respective worldviews. This does not mean that a worldview without a manifest Knowledge Structure lacks a value system, or a Human Structure that acts as the ground of social and political activities; on the contrary, all these activities will be carried out and regulated by a World Structure that may acquire a degree of sophistication within its respective worldview. But it cannot acquire the level of sophistication manifested in such scientific worldviews that can adequately be analyzed into their Knowledge, Value and

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Human Structures. This is where the significance of what I am inclined to call “scientific worldviews” lies. For, it is only these worldviews that can clearly be analyzed into their manifest structures. Moreover, our university curricula must also be based on such an analysis worldview; hence, it is very important to fully elaborate this also as an epistemology because if we know how humans acquire knowledge then we can teach them with more effective methods, since teaching primarily consists of “making the student acquire knowledge”, i.e., ‘to learn’. We may moreover utilize this exposition to establish a philosophy of education on the basis of which we can erect our theory of education and the educational system. But in this paper I would like to concentrate on our main issue and as such we shall be content with presenting this epistemology on Table 1 which illustrates all the processes of knowing.⁹

The External Process of Learning: Philosophy of Education

The external process of learning is all the activities taking place outside the learning subject when s/he is engaged in learning and hence, it is education in the real sense. If we fully outline this process it will be in the true sense our philosophy of education on the basis of which our educational theory will be developed. We are not in a position to fully outline it in this context because there are more concepts involved in it, such as the purpose of education and the nature of the subjects to be educated. We shall therefore concentrate on the main issues that will guide us through developing our perspective out of which we can construct a curriculum for sciences and humanities in our universities. Since the internal and external processes do not work independently of each other during the actual activity of learning it should also take place at two planes; natural and systematic.

a. Natural Learning

As we have pointed out, the natural process of learning or of acquiring knowledge is the personal trial of an individual in acquiring knowledge. Usually this is the way we first begin to learn things when

we arrive to this world but it continues after even we begin to learn systematically through our regular school education. Everyone can develop his/her own method for this kind of learning but in any case the main method of natural learning is trial and error. Because of this individual character of natural learning no educational theory can be established for it. The actual education involves when systematic learning begins in a scientific way and we shall now examine this.

b. Systematic Learning

We have so far developed the basis of a philosophy of education. Now we need to eradicate our philosophy on this basis. First of all, two processes of learning, namely internal and external processes are parallel to each other and therefore cannot be totally independent of each other. If so, then the natural internal and external processes are also parallel as well as the systematic internal and external processes. Since the natural processes are excluded from the educational philosophy though they can be included within the theory of education itself, then we need to use the systematic internal process to develop the skeleton of our philosophy of education. The systematic internal process of learning as we have seen gave us the concept of worldview with its basic structures. Among these structures as we have seen the Life Structure is developed within the natural process and thus cannot be included in the systematic process. This does not mean that it should not be discussed in an educational philosophy.

On the contrary, the epistemological process at this stage through which a worldview emerges should be discussed here. But it is not significantly relevant for the challenges facing higher education today. Hence we suffice by indicating that this is the initial process through which worldview begins to be formed in the mind of an individual. If we thus exclude this structure then we are left with two fundamental groups of structures: in the first group we have the World Structure, as the fundamental outlook representing the individual’s identity as well as his perception of the whole world. In the second group we have the Knowledge structure as representing the rest of the structures. We argue here that in the philosophy of education we need to include the rest of the structures in the Knowledge Structure because they are developed on the basis of knowledge and indeed through the scientific
knowledge acquired through one’s education. With this analysis we are left with three structures: Life, World and Knowledge. As we have excluded the Life Structure from the philosophy of education we are to utilize only World and Knowledge Structures.

Since the Knowledge Structure regulates our scientific activities it also includes within itself the network of our scientific terminology, which we have called “Scientific Conceptual Scheme”. As this is a developed mentality it must be included in the higher stages of education. It is therefore inevitable to include the Scientific Conceptual Scheme in our philosophy of education. This outline gives us three stages in education: 1. the Stage of the World Structure and as such it constitutes the earliest systematic learning process. Since at this stage the worldview of the individual is not fully developed to be distinguished from his/her World Structure it is more apt to call this the “Stage of Worldview”. 2. The Stage of the Knowledge Structure which constitutes the middle stage and as such the basic terminology of sciences are given and the Knowledge Structure of the worldview is fully inculcated into the minds of individuals. 3. The Scientific Stage where attention is paid to develop in the worldview of the individuals a scientific mentality. Since this represents the final stage of education it must be the stage of higher education as represented primarily by the university. We can add another stage to this philosophy of education which is the Stage of Specialization.

We may derive an educational theory from this philosophy of education as has been presented in a simple way. Our educational theory, as based on this philosophy of education, reveals five stages of learning: 1. the early education which has the Life Structure as the most important component and starts from the birth of an individual before the formal schooling starts. But we must add that this education should continue throughout one’s life because it concerns the Life Structure which is also the initial worldview. 2. Elementary Education which is concerned with the worldview of the individual; 3. Middle

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11 Ibid, 86
Education is concerned with the Knowledge Structure within the worldview of the individual; 4. Higher Education is concerned with developing the Scientific Conceptual Scheme within the Knowledge Structure, and finally; 5. Graduate Education aims at developing the Specific Scientific Conceptual Scheme and as such it is the stage where more attention is paid for the specialization.

The last two stages concern us here as they deal with the higher education. But we need to elaborate all the stages in order to clarify how one comes to this stage because curriculum at any level cannot be independent of each other. First of all in the early education the individual is prepared for the early education and taught the cultural elements in which knowledge should occupy a special place. This way every person knows that learning is significant. At this stage the home environment and what the parents do is very important. An individual with a good Life Structure in mind means one who has a worldview that backs up knowledge tendency. I believe that it is at this stage that the person is motivated to do what s/he wants to do later in life and as such it determines for the most part the person’s tendency to develop though somewhat unconsciously and naturally his/her leaning for a career in life. It may play a role to develop the person’s inherent ability for whatever it may be.

Secondly, the individual is ready for the Elementary Education when s/he has a solid Life Structure in mind. Since this corresponds to the Stage of Worldview at this stage of education only elements that make up the basic structure of the individual’s worldview must be given. Special techniques should be developed to the teaching of his/her worldview. The curriculum should also be developed on the basis of that worldview. There is no need to teach basic sciences at this stage as it is done today in the Muslim world. What is needed is to teach our own worldview very effectively as it was done in previous Islamic education. By saying this I do not mean to copy early Islamic educational method and curriculum. What I mean is that whatever it was in early Islamic education learning was very effective and scientific education was based on solid ground at

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this elementary level and that is why many scientists such as al-Ash’ari, al-Kindi, Khwarizmi, Ibn Sina, Ibn al-Haytham, al-Biruni, al-Razi, Ibn al-Shatir, Ibn al-Nafis, etc. were brought up out of those schools.  

In the Third Stage the Knowledge Structure of the individual’s worldview is given. We need to elaborate this because it is crucial for an educational theory. Also it is this stage that prepares the student for university education. In the Knowledge Structure of a worldview there are concepts that provide a mentality to the individual. These concepts are held in unity under the umbrella concept “knowledge” which thus acquires a doctrinal character. Other related concepts in this unity are science, truth, falsehood, opinion, belief, certainty, method, theory, understanding, doubt and so on. All these concepts are well formed and harmonized together so well that their unity projects an understanding called “knowledge mentality”.

As such it projects one’s understanding of knowledge, method and truth together with their significance. The student learns with this mentality that knowledge is valuable and that one needs knowledge in life. Also the student finds out that knowledge acquired with special method is called “science”. The application of science is technology and so on. Of course the way these propositions are put here may be expressed in different ways in every worldview. There is just one common characteristic in all worldviews here; they all have a specific Knowledge Structure of their own. When this structure is well developed in the minds of the students then they find out what to do with knowledge. Those who are still interested in the same type of systematic knowledge will continue for higher education where they will begin to learn all sciences in a general way. Hence, we arrive at the Fourth Stage which is the stage of Higher Education. The approach at this stage should be interdisciplinary so that the student learns about all the sciences in a general way but in later years of this stage they drift to a more particular area which will eventually become their area of expertise.

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Suggestions for Curricula in Sciences and Humanities

We may now attempt to formulate our suggestion to develop a curriculum for sciences and humanities based on our above exposition. We have already tried to show the specific place of the university in an educational system. Our approach does not take the higher education as a separate entity from the early education and thus considers it as an integral part of and complimentary to it. In the past the madrasa education was not taken discretely, but as a whole from the beginning to the end of one’s educational training. But today the university is not seen any more a part of this general education but rather the training sanctuary for either practitioners of science or for those who seek to get a job for livelihood. As a result of this wrong understanding most students come to the university not to acquire the scientific mentality of the age and above all to get knowledge which leads to virtue. They rather come with a wrong attitude thinking that they need to acquire the contemporary scientific knowledge.15

The second misunderstanding is seeing the university as an institution of teaching only and thus it is believed that only contemporary scientific knowledge is to be taught to the student. This eventually leads to arrange the university curriculum not according to an educational philosophy and a theory. We must understand that theory is the plan of an achievement. If there is no plan then the whole institution is simply copied from an existing model. This is why the most developing nations copy a model of the university from a Western country and try to develop it in their own culture. They cannot develop because the university model in the West is based on an educational philosophy which is foreign to the indigenous culture. Since they do not know that philosophy they do not know how to cope with its problems either. I would like to point out that this second problem is mainly depend on the first one and thus can be solved on the basis of a scientific mentality only. Let us elaborate this issue because of its significant relation to curriculum development.

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15 Alparslan Acıkgence, Islamic Science Towards a Definition, (Kuala Lumpur: International Institute of Islamic Thought and Civilization (ISTAC), 1996), 55

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Scientific attitude is a skill which is hard to acquire. But acquiring knowledge is not a skill and therefore, knowledge can be acquired without even having such a scientific attitude which is a skill that is projected with a mentality that develops in a scientific tradition. A mentality is an understanding that is grounded in a structure of a worldview. As such it controls our behaviour. It is in a sense the mental framework or perspective out of which naturally and/or actively follows a human activity. Knowledge proceeds from a mental framework naturally, if it arises purely out of the capacities of our knowledge faculties. Therefore, if an activity springs only naturally from a mentality, then it depends totally on the internal process of knowledge.

But usually humans are not subjects that acquire knowledge passively; they are rather active agents that contribute to the process of knowing and learning. In this way knowledge will proceed from the knowledge acquired through both our education and using the natural capacities of the mind. It is this kind of a knowledge acquisition process that we call ‘active’. It is clear that mentalities are more important in the active knowledge processes because it is the mentality that controls the active participation in knowledge. In that case the aim of university education is to develop a scientific mentality in the mind and attitude of the student. For, without such a mentality it is not possible to be actively engaged in scientific activities. The university is not a place of giving knowledge to the student although the approach in classes and studies will definitely lead the student to some knowledge in his/her area; but above all it is the place where the student acquires the skills and know-how to reach such knowledge through especially critical thinking which is an integral part of scientific mentality.

In that case when we decide on the subjects to be taught in Islamic universities we should choose subjects very carefully. For instance, the student may need at first general knowledge in his/her area as a result depending on the subject at least three introductory level courses in his main subject will be placed in the curriculum. The credit and hours of the courses can be determined by the experts in that area. Since in the contemporary world scientific knowledge is increased quite broadly there will be in every field some sub-fields; for example in physics, general physics with all laboratory experiments
is taught and then a selection from the sub-fields of physics such as solid state physics, mechanics, thermodynamics, molecular physics, nuclear physics etc. may be taught.

We must know that it is not difficult to learn; but it is difficult to develop a skill. Since scientific mentality is a skill it is very difficult to acquire; it takes learning, practicing and long observations of the masters in the area. A skill is therefore developed on the basis of master-disciple relationship.\(^\text{16}\) This requires longer contact hours with professors. Therefore, it is important to determine the weekly hours of each course at every level because as the student passes on to higher levels the contact hours may be less. Moreover, since we would like our students to acquire and even develop our own perspective we need to design courses in Islamic scientific tradition. For this purpose we need in the first place our students to get a good grounding in the history of Islamic scientific tradition. The course to be given for this purpose is not a simple history of science in Islamic civilization; it is rather a course which is designed to teach the historical continuity of Islamic scientific tradition. Hence we call this course “Scientific Process of Islamic scientific tradition”. This course pays attention to the process through which Islamic scientific tradition emerged, developed and reached our own time.\(^\text{17}\) Moreover, this course shall provide a good ground and basis for two other courses that will teach the methodology and logic of Islamic scientific tradition.

Furthermore, in contemporary world applied ethics in different fields of sciences is becoming more and more significant; such as bioethics, medical ethics and environmental ethics. If we take these as applied ethics and not theoretical ethics then it would be expressed in the terminology of Islamic scientific tradition as “adab” literature. This approach used to be very common in the past which has been neglected by Muslims. Recent attempts to recover this tradition fall into a trap of Western scientific tradition. For, in Islamic scientific tradition there


\(^\text{17}\) In order to get an idea about this course I would recommend my book to be published soon by IKIM, Kuala Lumpur with the title \textit{Islamic Scientific Tradition in History}. 

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is no theoretical ethics by which we mean philosophical ethics because
Islamic worldview does not allow such ethics as we have tried to show
elsewhere.  

There can be applied ethics on the basis of Islamic worldview which is thus called “adab”. We may give as examples all the books written with titles, such as adab al-atibba’, ādāb al-‘ilm, ādāb al-qādī and ādāb al-mulūk. For this reason there should be in the curriculum of our universities a course on the adab of Islamic scientific tradition. But in order to make this course plausible we must design another course and thus make it required for all students on the philosophy of Islamic scientific tradition.

The curriculum developed on the basis of these principles should be logical and scientific; otherwise we may not be able to justify ourselves. I have tried to provide this justification on basis of the simplified version of my philosophy of education. With these principles then we may give the following plan of action for the curriculum for our universities:

1. Two or three courses at introductory level;
2. Two or three required courses in sub-fields of the students;
3. Two or three elective course in the field of the student;
4. Two courses in Islamic scientific tradition;
5. One or two courses in the methodology and logic of Islamic scientific tradition;
6. Two courses in the philosophy and adab of Islamic scientific tradition;
7. The rest are elective courses.

We must know that the above curriculum may require some supporting courses such as logic, and introductory courses in philosophy and sociology. A student who takes the above curriculum in his/her area is already endowed with Islamic worldview properly in

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18 See Alparslan, Scientific Thought, 143-4.
the earlier education as outlined in our philosophy of education. For, the university is not the place to teach Islamic worldview but rather the place to examine any worldview critically and scientifically. Therefore, if a student is not properly brought up with the underlying courses s/he cannot acquire the desired result under the above curriculum. Moreover, I am not giving the exact number of the credit hours a student is required to take for the bachelor’s degree because this can be determined individually in each university depending on the social and educational context. But it is important not to load the student with unnecessary burden of giving much knowledge. In the past students would stay in the madrasa compounds, so he could devote full time for his studies. But today circumstances are different and unfortunately students devote very minimal time for knowledge activities. All such conditions may be handled carefully to solve these problems.

Conclusion

We should keep in mind that the moral purpose of Islamic education is to develop oneself as a righteous person in the service of Allah. “I have only created jinns and human beings that they may serve Me.” (51/al-Dhâriyât, 56). This purpose of creation cannot be put aside in education no matter at which level we teach. I, therefore, consider the moral challenge to be the most outstanding danger facing the higher education today. We may deal with other challenges as we can easily recognize them since they are internal to education. But the moral problems facing us are not directly related to education and as a result cannot easily be diagnosed and as a result, the moral element is almost totally neglected in analysis of scientific traditions.

Since the university as an institution represents scientific tradition, then the moral challenge for the higher education can also be obtained within the analysis of the emergence of scientific traditions and that is why the adab of scientific attitude embedded in Islamic scientific traditions as the new trend in higher education must be an integral part of the curriculum. I emphasize this point because unfortunately it is neglected in the newly arising so many universities especially in the Muslim world. Since the higher education represents the scientific
attitude reflected in a scientific tradition then obviously the university is ought to assume this task. If we see that all these factors are reduced to the moral struggle (ethical jihād) then the scientists in the higher educational institutions must realize where to start. It is for this reason that I am positing the scientific attitude as the most dispensable trend today in the Muslim world for the universities in any curricular effort.

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