Towards Development of Scientific and Technological Leaders in Muslim world

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Abstract

The development of human resources is the key issue in any science and technology development in any country. Environment for development of scientific way of thinking and creativity development should be carefully created. Such environment should include well training of teachers, proper establishment of syllabus, development of teaching materials and system of education as a whole. Such a development should have the aim of producing a personality which can compete with counterpart persons in developed countries.

The second aspect in human resources development is the concentration on moral values and Islamic characters based on Islamic values and teachings. Practice of such values should be given the major emphasis. Such education and practice are in fact the same for science students or other society members. Hence development of the moral values of the society based an Islamic teaching is an important aspect.

The third aspect for development of abilities of foreseen scientists and technological persons is to give them the necessary Islamic knowledge and logical reasoning based on Islamic (*Usool*) to enable them to implement islamization of knowledge in their own field of specialization.

Study of *Usool* and *Fiqh* are now nearly limited to *Shari'a* student and scholars. Hence all texts and references are either old or directed

towards these students and scholars. However science students and scholars find such references far from their specialization, hard to understand and difficult to use when they need. It is necessary to compile books in *fiqh* which are prepared for one single specialization. e.g. for civil engineers, surgeon, agricultural engineers... etc. Such books should collect all the basic problems and examples in that field, written in a way suitable for scientists and engineers. A more general texts topic is the *Usool* which should contain the *shari'a Usool*, *Fiqh Usool* and *Hadeeth Usool* written in a simplified language suitable for basic degree students, as well as postgraduates. The aim of such references should be to create a scholar of scientific logical thinking who can pave the path for future generations progress in life based on Islamic teachings.

Abbreviations and Acronyms:

Aql: Root of a verb which means use of brain.

Da'wa: Preaching.

Statements: Statements which are clear in their meanings.

Doubtful Statements: Statements which may be interpreted differently by different people.

Fatwa: Judgment of a muslim scholar about a certain matter met in life.

Fakr: Root of a verb which means think.

Faqh: Root of a verb which means understand thoroughly.

Fiqh: Islamic law:

Gharar: Acts which may contain direct or indirect cheating due to ambiguity or otherwise:

Haq: Truth.

Ibadat: Pure acts of worship.

Ijtihad: Using every possible effort and all ability in prediction of orders of God and their applications as these orders are understood from their original sources. i.e. *Quran* and *Sunnah* of the prophet (p.b.u.h.).

Mu'amalat: Matters related to relations between people.

Ramadhan: The month of fasting.

p.b.u.h.: Peace be upon him.

Shari'a: Islamic law.

Sunnah: Teachings of the prophet (p.b.u.h.).

Ta'arudh: Apparent contradictions between two statements.

Tarjeeh: Decision that on statement is more true applicable than another.

Taqwa: Piety.

Usool: Fundamental rules.

Wahi: Teachings of God descended upon the prophet (p.b.u.h.) i.e. *Quran* and *Sunnah*.

1. Introduction:

The Muslim world after centuries of giving to human civilization, it lived into a period of dark ages for the last few centuries. This period of dark ages to the muslim world happened to be the emergence of western civilization. The leadership of humanity can be achieved only through giving. Hence those who are accustomed to receiving are at the tail of the group. The treasures which iare owned by muslims in values and principles can be truly evaluated only if it is transferred into practice.

In Studying the verses of *Quran* which argue with unbelievers, it can be easily noticed that the reasoning given directs the attention of man towards study of the universe. Stars, sun, moon, planets, clouds, mountains, seas, rivers, plants, animals and man, are among things towards which attention of man is directed to study.

Attention to reason things is repeated many times in *Quran*. The three word roots (*Aql*, *Fakr*, *Faqh*) related to human reasoning and thinking are repeated in *Quran* 49, 18 and 20 times respectively.

Hence in short, man is directed by islamic teaching to investigate things around him without any fear that this may lead him to disbelief, since God is he who gave *Quran* and also God is he who created the universe. It is unreasonable to find contradiction between the two. On the

contrary islamic teaching emphasizes that thinking is a way of worship and it leeds to the proof of the oneness of God and his greatness.

That sort of investigation lead the muslims in the first three centuries after the prophet (p.b.u.h.) to the scientific progress and then building of Islamic Civilization which was based on a balanced combination of human values & material aspects.

The centuries which followed, showed a less use of human reasoning and creativity. Finally the nation found itself indulged into useless arguments and endless discussions of details which had no consequences on the muslims lives. The spirit of islamic personality which was highly recognized during the first three centuries died down. Gradually many intelligent scholars or scientists who appeared to be able to give something new were fired and their abilities were killed. Finally that left the nation just like a helpless sick man.

The muslims now find themselves almost unable to take themselves away from the situation they are in. Many of them believed that their refuge to western science and values is the right solution. Some others go to the other extreme of trying to find the solution in between statements of *Quran* and *Sunnah* without any act of human reasoning. A thorough study of the related verses of *Quran* "إن الله لا يغير ما بقوم حتى يغيروا ما بأنفسهم"[1], "God does not change the status of people until they change what is in their ownselves". Muslims need a change. Such a change should be in a creative way. Let us first investigate the sort of creativity practiced in the first three centuries of islamic civilization i.e. *Ijtihad*.

2. Creativity & *Ijtihad*:

2.1 *Ijtihad:*

Ijtihad is defined as : using every possible effort and all ability in prediction of orders of God and their applications as these orders are

understood from their original sources i.e. *Quran* and *Sunnah* of the prophet (p.b.u.h.)[2].

Early great scholars of islam performed *Ijtihad* in predicting the basic rules governing various aspects of understanding islamic teaching from their original sources (*Quran & Sunnah*). That was known as *Ijtihad* in *Usool*, since the *shari'a* does not states the rules for details separately but gives general rules and absolute statements which covers unlimited cases[3].

Later on some scholars performed *Ijtihad* in predicting *Fiqh* details based on the rules predicted by the first generation of scholars. That was known as *Ijtihad* in *Furu'*. (in secondary matters).

The muslim scholars in the centuries that followed talked about the end of *Ijtihad*. That actually resembled the end of ability of the nation to give. With full confidence in their judgments according to the state of the nation ability to give, they were right somehow in safeguarding the nation from going astray from the straight path. In fact, that idea reflected a status of sickness rather than healthy situation. However some of the great scholars even then announced that *Ijtihad* is a must all the times since it is impossible for muslims to perform their duties without it[4].

The progress of the muslim world during the last decades showed an increasing awareness of the causes of the nations' problems and their remedies. As regarding this last point, one should distinguish between *Ijtihad* in acts of worship (*Ibadat*) and *Ijtihad* in world affairs (*Mu'amalat*). In *Quran* "إن صلاتي ونسكي ومحياي ومماتي لله رب العالمين"[5], "My worship, my sacrifice, my life and death are all for the sake of God the lord of the worlds". The first group of acts are governed by "خذوا عني مناسككم"[6], "Take your acts of worship from me", as the prophet (p.b.u.h.) said. On the other hand the actions related to life affairs are governed by his saying "أنتم أعلم بأمور دنياكم"[7], "You are more knowledgeable in matters related to your own life". However in between there is a gray area like habits, social relations, and many others which should be governed by *Wahi* with good margin for human reasoning and status of humanity

progress. Still all these three areas should be under the complete follow of *Quran* and *Sunnah*.

Hence we find that affairs of muslims are governed by a combination of teachings of *Wahi* (*Quran & Sunnah*) and human reasoning with different rate of emphasis. In case of pure worship the acts should be in accordance with *Quran & Sunnah* and nothing or very little is left to the human reasoning.

However in pure scientific matters, human reasoning has the major role and islamic teachings have only general rules and guidelines. The rest is left to muslims reasoning in the light of humanity progress status.

What we mean by *Ijtihad* today is to perform judgment according to islamic principles in newly developed matters.

The necessity of performing *Ijtihad* in the important and basic issues facing the muslims in their present time still lie on the burden of the muslim specialized scholars and the religious institutions they belong to, in order to practice collective *Ijtihad*.

However our concern in this paper is how to develop the ability among leaders of scientific and technological development, researchers, educated people, thinkers and leaders in the muslim world to be able to re-form their judgments, predictions, way of thinking in their own specialization so that all that will be in accordance with the basic teachings of islam.

With the flow of technology transfer and flood of ideas coming to the muslim countries from the west, the challenges become more acute.

Hence the main essence of *Ijtihad* today should be to convert the muslim nation to a creative nation rather than imitating nation.

It is obvious that this process can never be achieved except through developing creative individuals who are true believers and have enough knowledge about the basics of their religion as well as being creative in their own fields of specialization.

Such a process in itself can never be imported but it should be locally created. Hence plans for performing this great change in itself is a matter of creativity challenge.

<u>2.2 Creativity:</u>

There is no need to indicate that the developed countries had a rich experience in human resources development. That was to the extent of transferring their own individuals to highly skilled and creative persons so that they become able to cope with highly changing priorities of life around them during their lifetime. Many less developed countries started to tailor such experience in human resources development towards their own local situations. Such tailoring was done only by individuals from these nations and not from abroad. It remains the challenge to muslim world to take big steps in this direction. In many countries such development is taking place but in a slow and badly planned manner[8]. Very little experience is transferred in between muslim countries in human resources development; While the major transfer of knowledge is done directly from developed countries to developing with little account taken to local situation. System of education is a good example of this.

The first generations of individuals who got their education in the west, started forced imitation of the western systems in their own countries since those individuals to a large extent were given the leadership of development in their own countries. Generally the rush of changes didn't give enough time to take local circumstances into account..

Nearly all systems of education in muslims countries are apparent imitation of system of education in developed countries. Such systems missed two aspects: spirit of original system and taking local circumstances into account. Keeping in mind the fast scientific progress and knowledge revolution taking place in the developing countries, the individual educated in the muslim countries in general is becoming less and less able to face the challenges of the coming decades. In other words the gap between developing countries and developed countries (and individual creativity in the two group of countries) is increasing. Muslims suffer from dealing with problems in unscientific way. Unless they

become committed to science and scientific methods as individuals, society and governments there is little hope in their progress[9].

What we need now is to develop creative leaders rather than imitative leaders. This development should start at childhood and integrated in system of education[10]. That leadership is needed in all aspects of life: administration, education, legislation, science, technology, service sectors,...etc. Such leadership should be more educated about basics of islam, have better moral values in practice and be creative. Their knowledge about the world progress around them should be in balance with their knowledge about their own religion's values and ideals.

3. Necessity of Moral Values and Islamic Ideals:

In spite of the well developed systems in developed countries, individuals and society are not able to overcome misconduct, corruption, and uncontrolled misbehavior by individuals since the western civilization concentrated on materialistic progress and had no solid moral values basis. On the contrary Islam has very solid moral values but lacks nowadays the living examples in various fields of specialization.

The Various groups of *da'wa*, preachers, reformers and muslim scholars in various muslim countries in this century had given a push towards giving a good example of a muslim who can coup with challenges of modern life, at the same time of living a life of virtue which has an aim far beyond human body materialistic satisfaction.

In trying to assure the control of such spiritual and moral values on the overall behavior of muslim communities in various parts of the muslim world, it can be easily found that that effect is much less than the level needed to give a fundamental change in the life of muslim individual.

One of the main reasons of this poor achievement is "The lack of correct knowledge and poor practice of leaders (politician, scientists, administrators etc.) in the muslim world of the true teaching of their religion and the little knowledge of muslim preachers and religious leaders about the challenges of the modern life". The two group of people seem to talk different languages and live in different universes. Unless and until these two groups of people are brought together and understand each other, the internal pressure on muslim societies will continue and the progress of the muslim nation will face great difficulties.

Our aim in this paper and in this conference I presume, is to bring scientist and technologists nearer in their way of thinking and in practice to the ideals of islam.

4. Needs for Research in *Usool*:

When we talk now about *Usool* as scientists we probably deviate slightly from the standard definition of *Usool* in *Basic Shari'a*.

Scholars in *Shari'a* define *Usool* as the basic Rules which define the method of predicting details of the orders of Gods as understood from certain statements in *Quran* and *Sunnah*. Such rules spread over all areas of worship (*Ibadat*) and human relations (*Mu'amalat*).

A scientist or a technologist should understand quite clearly the aims of *shari'a*. He has to categorize in his mind the sequence of the five basic of necessities(Al-Dharorat Al-Khams): religion, life, brain, wealth and descendants. He has to distinguish between the different levels of any category of rules : Necessities الضرورات, less important الحاجيات and the least important things التحسينيات.

What concerns us as scientists today is only part of these *Usool* which are related to relations between people (*Mu'amalat*) and specifically those related to modern life matters.

These *Usools* are to include some scattered matters in *Fiqh* also.

In order to put things in order, let us take the example of a advising a sick person not to fast during *Ramadhan*. A muslim physician has to give the advise. But on what basis? In order to explain those basis, one has to understand many rules in *Usool* e.g. those mentioned above ; has to understood many rules about fasting and their *Fiqh*. This is additional to his islamic characters and piety (*Taqwa*).

Another example is the specialist who has to draft a contract for an engineering work. What he has to know? He has to learn many things e.g. definition of (غرر) *Gharar* which is prohibited in islamic dealing. He has to avoid any ambiguous statements which may lead into *Gharar*. It is sometimes impossible to get rid of all types of *gharar* in contracts. That was stated clearly by Al-Shatiby in Al-Itisam[11]. This gives a burden on muslim specialist to decide how much *Gharar* is permissible and when it becomes unpermissible. Such decision needs first of all piety. But additional to that the deep knowledge about the aims of *shari'a*, different rules related to the matter under consideration, the possibility of direct application of a verse from *Quran* or hadeeth of the prophet (p.b.u.h.) or a basic rule from usool etc. These are the basic tools for a specialist in his practice. Of course people differ in their abilities and judgments in

different matter. But the tools of judgments should be almost unified. It is quite acceptable and even recommended to differ in ideas and judgments but different opinions should have their own reasoning and support from basic rules of *shari'a*. The prophet (p.b.u.h.) said that the most knowledgeable among people is the one who recognizes the truth (Haq) when people differ, even if he lacks in the field of action[12].

If the specialist happened to face two seemingly contradicting islamic rules in relation to his job he has to be knowledgeable about *Ta'arudh & Tarjeeh* "التعارض والترجيح".

It is necessary to understand and be able to apply basic rules in Usool, like ما لا يتم الواجب إلا به فهو Difficulty results into easier rules, المشقة تجلب التيسير واجب What is a must to perform an order is also an order, لا ضرر ولا ضرار etc. He has to distinguish between the definite statements and the *doubtful statements*. There should be a good deal of practicing of accepting differences of opinions in mattes of *fiqh* and the ability to distinguish and judge among these different opinions.

Hence one may argue that these matters need a specialized scholar to give *Fatwa*. What really we need is that the muslim leaders in science and technology have to be able to practice minor *fatwa* in their own fields rather than referring every time to religious scholars. How we can achieve this?

We need researchers to compile books of *Usool* written in simplified languages containing modern examples with the intention of educating scientists and technologists in *Usool & Fiqh* in relation to modern life matters.

Study of *Usool* and *Fiqh* is now nearly limited to *Shari'a* student and scholars. Hence all texts and references are either old or directed towards these students and scholars. Science students and scholars find such references far from their specialization, hard to understand and difficult to use when they need. It is necessary to compile books in *fiqh* which are prepared for one single specialization. e.g. for civil engineers, surgeon, agricultural engineers, safety engineers, drug manufacturing, advertisement trade, food industry, genetic engineering... etc. Such books

should collect all the basic problems and examples in that field, written in a way suitable for scientists and engineers. A more general text topic is the *Usool* which should contain the *Shari'a Usool*, *Fiqh Usool* and *Hadeeth Usool* written in a simplified language suitable for basic degree students, as well as postgraduates. The aim of such references should be to create a scholar of scientific logical thinking who can pave the path for future generations progress in life based on Islamic teachings.

The preparation of those mentioned texts need collaboration of specialists from various fields as well as religious scholars.

5. Conclusions:

The basic necessity of development of Science & Technology in the muslim world are: human resources, natural resources and systems.

Systems has to be built by humans. Hence development of scientific & technological leaders who can develop such systems locally is a must in any successful development in the muslim world.

Scientific and technological leaders have to be real experts in their own fields and also faithful in applying the true teaching of their religion in their field of life "إن خير من استأجرت القوي الأمين".(13) " The best of men you hire is the strong and faithful" as stated in *Quran*. Strong here is the distinguished in his specialization.

In order that such leaders be able to apply this, they have to be true believers. They have to apply the teaching of islam in their private lives and practice these teachings. They have to be creative. Such creativity need an excellent knowledge in their expertise and a fair knowledge of basis of implementation of islamic fundamentals in their field of specialization. The paper attracts the attention towards the necessity of modernized presentation of one of the important specialized field of Islamic *Shari'a*, i.e. *Usool* in a way suitable for scientists and technologists and directs scientist and technologists to write and discuss matters related to their specialization in the light of islamic teachings.

6. References:

(1) The holly Quran: Al-Ra'd 13.

(2) Daraz, Al-Muwafaqat by al-Shatibi.

(3) Al-Shatibi, Al-Muwafaqat vol. 4 p. 94.

(4) Al-Shatibi, Al-Muwafaqat vol. 4 p 94

(5) The holly Quran : Al-An'am 6.

(6) Narrated by Al-Nasai and Muslim with slightly different wordings.

(7) Narrated by Muslim.

(8) M.Z. Khedher, The challenges of development of Creativity, The third seminar of Union of engineers in the Muslim countries about Creativity, Amman, May 1995.

(9) Refer to selected papers by M. Abdul Salam: The developments and scientific progress in the third world, 1989.

(10) M.Z.Khedher, The development of science and technology in the Arab countries, The seminar of science and technology in the Arab world, The Scientific resources development organization, Oxford, 3rd December 1994.

(11) Al-Shatibi, Al-Itisam p 327.

(12) Al-Shatibi, Al-Muwafaqat vol. 4 p 161.

(13) The Holly Quran : Al-Qasas 26.