

# Selected Major Issues in Instructional/Communication Technology: An Islamic Perspective

*Dilnawaz A. Siddiqui*

Instructional/Communication Technology has come to mean, in a narrow sense, media hardware or a set of tools enabling human beings to overcome their physical limitations. Etymologically, it means one or more techniques, both concrete and abstract, that help human beings solve problems. By extension, instructional technology (IT) means all tools at our disposal for facilitating learning. Tickton (1971) defines the purpose of IT as making "education more productive and more individual, to give instruction a more scientific base, and to make instruction more powerful, learning more immediate, and access more equal." While the technology itself might be neutral as a medium and as a means of instructional communication, it is the nature of its use, in terms of timely and appropriate messages, that is the key to understanding its consequences. It is this final factor upon which society needs to focus.

The recent combination of computer, video, fiber optics, satellite television, and other state-of-the-art technologies has enabled a small group to control the lives of billions. Instructional technology has also inherited its own share of this instantaneous global power. As a result, traditional boundaries between IT and mass media communication have blurred so much that IT sounds like a misnomer.

It has now become a platitude to say that the nation that controlled the sealanes in the nineteenth century, or that controlled the airways in the twentieth century, controlled the whole world. In the twenty-first century, it appears that whoever controls the airwaves will control the world and whatever is beyond it. Thus the most explosive confluence of hard-

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ware techniques has aroused huge vital research questions about the consequences of the psychology, as well as the politics, of power and control over emerging technologies and their myriad uses for humanity.

Appropriate answers call for consideration of basic philosophical views of life, humanity, and the universe. In western IT literature, these have either been ignored completely or subdued by superficial concerns over the design and development process of instruction. On top of this, commercial interests continue to seek for opportunities to sell their wares even in the name of teaching.

In a recent survey of IT literature, the category "society and culture" was rated last but one (Ely 1991). Even in learner-related issues, the neural anatomy of cognition attracted the most attention, to the almost total neglect of the psycho-ethical aspects of human existence. An exception is the assertion by Johnsen and Taylor (1991) that both instruction and IT "are human inventions that spring from human values and human designs. They are value-saturated and operate in the social world quite unlike phenomena in the physical world." Probably in the same vein, Bednar et al. (1991) urge us "to reexamine all of the assumptions of any field and particularly one that purports to improve the human condition."

It is my expectation that this realization will mature, one day, into a viable movement. Why Johnny cannot yet read despite our most sophisticated instructional technologies can only be answered by looking beyond the neural networks of his mind and into the entire social milieu in which he lives. The problem seems to lie in the very myopic and exclusively economic or occupational skill-oriented goal of western education.

Islam, in contrast to such materialistic ideologies as communism and capitalism, stresses universal value-based character-building education. It tries to build, maintain, and strengthen a healthy societal climate and structure around the learner from the womb, to the lap, through home and school, and to global human society. Early modern (post-Renaissance) education models in the West were influenced by this balanced and all-round development of individual character that Islam has always stressed.

The remainder of this paper seeks to lay the groundwork by identifying some important issues from the broad Islamic view: theoretical assumptions behind the identification and analysis of IT issues and the development of six sets of relevant issues classified under the categories of humanity, message, medium, methods, milieu, and measurement.

## **Theoretical Assumptions**

According to Johnsen and Taylor (1991), the theoretical bases of traditional western IT are found in the 1950s mechanistic teleology of

Tyler, which presupposes that each instructional activity has a measurable purpose. This behavioristic view was later promoted during the 1960s by Skinner's teaching machines and, still later, by the IT movement itself. Its earlier applications were seen in the military-industrial complex, followed by similar ones in the education and training sector. The direction of research and development was increasingly inward, into the learner's mind, to the ever-greater neglect of broader societal factors.

Here I have attempted to show that, in addition to individual mental responses to preformulated instructional stimuli, a learner's mental behavior is affected by other vital factors based on the inevitable linkage between one's belief, attitude, and behavior (Siddiqui 1988). Before specific critical issues in modern education are discussed, the logical assumptions upon which the analysis is based should be made clear. They are:

1. Human communication phenomena (verbal and nonverbal) are never completely value-free.
2. One's actions are based on conscious or subconscious beliefs, values, and views on life, humanity, and standards of right and wrong.
3. An over-relativistic attitude results in chaos and conflicts, in the long run, rather than continuity and stability.
4. One's beliefs have behavioral consequences that affect the lives of other people.
5. A healthy society presupposes societal consensus on core (universal) values, such as honesty, a measure of autonomy in critical thinking and action, justice, peace, and unity.
6. To establish such a societal order, all individuals and institutions must attempt to contribute to these positive core values.
7. Members of a healthy society should try to promote positive beliefs, attitudes, and actions and eradicate, or at least manage, negative ones.
8. Unity in core values and diversity in peripheral ones will promote a creative, innovative, and concurrently sound human society.
9. Technology can be effectively utilized only if its use is based on the core moral principles stated above.
10. Therefore, instructional technologists cannot truly be value-neutral in their professional practice in terms of selecting and sequencing the content, concepts, or illustrations geared to facilitating learning.

## **Salient Issue Areas**

The Ely (1991) study of IT trends and issues classifies relevant contents and rank-orders the categories as: instructional process, technical developments, management (general), management of the IT field, manage-

ment of IT services, personnel, society and culture, and, finally, research and theory. As can be seen, broader sociocultural issues have not received enough attention. Of the trends indicated, four are related to the instructional development process, three to IT hardware, two to the professional education of technologists, and one each to impact analysis and IT research. While several issues within each trend are identified, not even one of them discusses individual or societal values. It is mostly the non-western educators who have vented their greater concern about IT being the end rather than a means (UNESCO 1989).

Here, I will attempt to identify and analyze major issues from a broader Islamic view spelled out in the following sequence: Humanity (author, learner, designer, instructor, administrator); Message (content); Medium (instructional tools); Method (techniques, processes, strategies, management); Milieu (instructional, societal climate); and Measurement (assessment, research evaluation).

Strangely enough, values in the western message design are not taken into account at any evaluation stage, for the concept of "evaluation" has been relegated to considering the extent to which predetermined learning objectives have been met. For Muslim IT experts, however, the first and foremost concern is what change an instructional objective will bring about in the learner's psycho-ethical fabric. The mission and meaning of human existence thus becomes all-important in Islamic education and training.

*Humanity.* The modern western individual is the product of powerful forces, among which are the weakening Judeo-Christian ethic; the resultant widespread atheism; the Darwinian idea of the survival of the fittest that, in turn, gives rise to fierce competition rather than cooperation; stark utilitarianism; and materialism. This view of human existence has been contrasted with the Islamic perspective in Table 1 on the following page.

*Message.* As regards message design, Islamic IT must ensure that curriculum contents are consistent with a sound view of life based on the human mission to serve the divine causes of truth, justice, equity, and peace, as defined in the Qur'an (16:36), through both verbal and nonverbal means (Qur'an 90:7-10) in all domains: cognitive, affective, and psychomotor.

All of the off-the-shelf messages currently available, particularly those in the form of data bases in the social sciences and humanities, have been written from non-Muslim viewpoints. The most stupendous challenge to Muslim IT experts is to make them usable from the Islamic perspective. This calls for the active involvement of Muslim experts in acquainting the "gatekeepers" with the potential possessed by Islamic values and practices

Table 1: Western and Islamic Views of Humanity

Predominant Western View	Islamic View
Born in Original Sin	Born free and innocent (6:164)
Darwinian evolved animal	Divine spirit infused (32:9; 15:29)
Instinctual nature	Combines determinism (33:38) and free will (18:29)
Devoid of divine guidance and without a human mission	In need of divine guidance, inheritor of it through prophets; human mission as vicegerent of God (2:30; 24:55)
Has no core values	Has core values (30:30) violation of which is sin (102:5-7)
Someone has already died for his/her sins	Is accountable for his/her sins (99:6-8; 49:13)
Homo Eonomus	Multidimensional success is the goal of life: spiritual, social, economic, and political (4:114)
Materialistic, individualistic, over-relativistic, dog-eat-dog attitude	Concern for others (3:110); sacrificial nature seeks clarity at the belief level (18:88)
Technologically advanced	Far behind in science and technology, hardware and software

for solving various problems that humanity is facing now, and will face in the future. The challenge for Muslim instructional designers is not only to defend their ideas, which are currently under attack from all sides, but to use their professional skills to present them so effectively that their truth will manifest itself and persuade the audience. Only then will the forces controlling entrance into data bases be adequately cooperative. At the public level, we find strong resistance to our viewpoints, yet at the professional level there is a greater search for alternative values and willingness to listen.

Consistent with his/her role as a vicegerent of God, the instructional planner and designer must promote lasting universal truths without being prejudiced (Qur'an 4:1; 49:13). While the Qur'an and the hadith literature contain all of the foundational principles for a just and judicious societal order, Muslims are obligated to apply them effectively and dynamically in order to meet the needs of specific circumstances happening at different times and in diverse cultural milieux. Muslim instructional planners and designers must devise tools and means to help experts in various disciplines achieve this purpose without compromising any principles. In addition, they must be equipped to assist Muslim organizations in updating and adjusting themselves in accordance with the current speed, complexities, and other relevant societal demands. This must be done while bearing in mind that some of these demands may, at times, not necessarily be in the best interests of the ummah or humanity at large. What we must remember, however, is that the Qur'an commands Muslims to be vigilant and observant, active as well as appropriately responsive to all new challenges (Qur'an: 4:95; al Fārūqī 1992). Muslims also need to heed the hadith that truth is the lost property of the believer and that it should therefore be taken wherever and whenever it is found.

Curriculum/instructional planners and designers must search constantly for core Islamic values and promote them by all Islamically acceptable means. Here we must state that Muslims have to be extremely careful to avoid lewd and immodest contents and illustrations while devising, adopting, and adapting any messages. All permissible (i.e., those that do not violate Islamic morality) forms of creative and innovation presentation skills and techniques should be used to make the message as motivating as possible. They should be cost-effective as regards time and money (Qur'an 7:31-3). As Islamic values are flexible, practical, and balanced (Qur'an 2:158), IT practitioners must avoid only what is impermissible. There is great room for aesthetic and artistic talents to make the message appealing and suited to the learners' advanced organizers.

Traditional education contents are not based on any valid needs analysis, are archaic in content and illustration (if not always in concepts), and elitist and pedantic in language. Current messages in so-called modern Muslim educational publications are contradictory in their ideas and thus confusing. Moreover, they are mostly irrelevant to the real problems faced by Muslims and thus ineffective in relieving their plight, myopically materialistic, secular-humanistic, atheistic, devoid of any sense of accountability, and unable to prepare the human resources for tackling new internal and external challenges. Thus it is vital to conduct a thorough analysis of existing educational curricula and the potential subtle and subliminal messages located in their contents and learning environments.

*Medium.* Now that the paramount significance of the message in curricular contents has been established, it is necessary to stress that the instructional medium is also important in terms of modern technology. While Muslims cannot accept completely the assertion that the medium is the message, we cannot afford to ignore its tremendous power and contributions as regards message access and dissemination on a scale never before seen in human history. Neither should we forget that the medium is only an instrument and that it should not be allowed to affect negatively the message's content, veracity, or impact.

Besides understanding the relative role of the medium and the message, humanity should also be concerned about the values of those who control the medium and with what message they are disseminating. As pointed out earlier, instructional technology has been confined traditionally to the activities of a single classroom in the academic context of a lesson unit. This is no longer true, for far-reaching distance learning technologies are capable of making the message accessible instantaneously and concurrently to billions of learners across the globe.

A case in point is the recent use (or misuse) of these powerful and sophisticated media by the coalition forces to wage and justify a horrendous war against Iraq that devastated the lives, economy, and military might of an innocent Muslim people. A similar process is now taking place on an international scale to brainwash and prejudice the public, particularly school children, against Muslims and Islam. The West hailed its victory in the Gulf war as the victory of the media. In essence, it was a crude display of one-sided media control and military might by the sole superpower against a third-rate developing nation.

The level of sophistication reached by the instructional and mass communication media is mind-boggling in terms of speed, access, variety, reliability, replicability, and affordability. However, it is the consideration of affordability (cost) that is most responsible for the serious discrepancies that face poorer nations trying to gain access to all of this technology. And then, within each nation there are even more differences in accessibility based on the urban-rural as well as other continua.

These rich-poor differences in media affordability also cause greater problems vis-à-vis person-machine-method interface. For example, accessibility is related to affordability, which, in turn, is related to the income levels of the learners' families. Individuals from low-income families have a higher level of computer phobia than those from high-income families. The more affordable one attempts to make instructional media for low-income families or institutions, the less motivating it is likely to be in terms of packaging.

Both active and passive uses of electronic media (i.e., television and computers), as well as their tremendous benefits, are said to have negative impacts that generally are covered by a blanket term: entropy. Several of the most frequently cited drawbacks include: a) Reduced reading habits or passive listening (confined mainly to such visual electronic media as television). Too much television watching, in addition to the negative effects of the vicious messages themselves, may result in passive listening and thus affect critical thinking; b) Decreased writing ability; c) Shorter attention span; and d) Reduced ability on the part of teachers to convey the message verbally. However, it is important to remember that the benefits of modern instructional media far outweigh the disadvantages.

*Method.* This element involves processes, strategies, and techniques. The general guiding principles of communication adopted and shown in the Qur'an and the Sunnah are wisdom, good advice, and the general welfare of the community (Qur'an 16:125), all delivered in a pleasant and merciful manner. Communication techniques should appeal to all God-given faculties and not tilt too much towards any one of the human senses. God created human beings in the best possible mold, which is characterized by optimal proportion and balance as key to his/her superiority over all other forms of life (Qur'an 40:64). This quality of balance is not confined to human beings as a species, but collectively, as the Muslim ummah was intended to be the best when it comes to leading a balanced life (Qur'an 2:143). Thus a balanced attitude in communicating with others is a sterling quality of a good Muslim.

It is easier for many Muslim nations to purchase the latest hardware developed by instructional and communication technology experts than to produce professionals who are competent in software planning, design, development, and evaluation based on the above-mentioned principles of communication. The dearth of expert instructional systems designers is widespread throughout the developing world and is acute among Muslims. In some cases, the situation is aggravated by a lack of awareness and support for training such educational personnel on the part of national economic planners and other key decisionmakers. The earlier they see this flaw, the better they can cope with the challenges that lie ahead.

Traditional IT in the West, preoccupied as it is with design and development processes, has used many models of instructional development. One of them, known as Instructional System Development (ISD), consists of ten sequential steps: needs assessment, goal establishment, task analysis, specification of objectives, development of assessment strategies, selection of media, production of materials, formative evaluation, any necessary revision(s), and summative evaluation (Schiffman 1986).



In the cognitive, affective, and psychomotor areas, more or less the same steps are followed. The differences only appear at the time of devising instructional strategies and selecting the media. For example, preference has to be given to concept clarification for cognitive domain objectives, role modeling for affective objectives, and demonstration for psychomotor ones.

Johnsen and Taylor (1991), who belong to the minority of instructional technologists emphasizing human values, illustrate very clearly how IT, since its inception, has been in the trap of behaviorism. According to them, this means that the teacher assumes the responsibility for student learning in terms of stimulus-response. The planner prespecifies and thus decides the mastery level, which often is limited to the extent of the course ware's technology. This state of affairs reinforces the impression in the students' minds that education is something that happens to them rather than something that they can control or participate in actively. Clark and Sugrue (1988) stress the need for IT to get out of this trap by shifting the paradigm from behaviorism to one featuring the increased use of cognitive theories. In addition, other learning theories, such as information processing, should also be fully utilized in the field.

Another trap in which IT still finds itself is its continued use of traditional models of instructional design, such as the one developed in the early 1970s at Syracuse University's Instructional Development Institute (IDI). Hardly any significant improvement in critical thinking, creativity, and artistic talent has been introduced into the process.

A Muslim instructional technologist must also set limits within which motivating and instructional strategies and techniques can be used. Obviously, they should not adopt uncritically any methods that have gained currency elsewhere. Islam encourages creativity and innovation, as is clear from its contributions to all fields of science and technology as well as human endeavor. Islam seeks to combine practicality with long-term implications for society at large. Thus it would not, for example, approve the use of pornography as high-interest motivational material to encourage student interest in reading. Regrettably, this was done by a non-Muslim teacher (see Abdus-Sabur 1993). Muslim professionals need to learn techniques from the West and other areas, and there is a great deal of room for both adoption and adaptation of all useful devices that are Islamically acceptable.

At the present time, changes in hardware technology are coming so fast and in such large numbers that instructional designers have been unable to derive the maximum benefit from the resulting scientific and engineering potentials. As a result, the outer limits of professional training and development of IT are becoming fuzzier in both content and scope.

*Milieu.* This factor can be defined as the interaction between society's demands on media and what these media do to society. Most of the studies dealing with learning difficulties and problems of education in the West have focused either on the interaction between the learner and the media he/she is exposed to or, to a lesser extent, on administering narrow institutional learning environments. For the most part, the instructional research on why Johnny cannot read has concentrated on Johnny's mind or on the language level of the contents. Rarely has any attention been paid to broader societal factors: the role of conflicting and confusing messages of the mass media, value content, commercial designs of the media controllers, and the resultant social milieu characterized by crime, other moral aberrations, and heretofore unknown diseases rampant in the West.

Protagonists of systemic and systematic thinking—supposedly the instructional systems designers themselves—ought to have figured out by now that any positive or negative change in one element of the broader societal system is bound to affect other elements. What seems to have happened in the field is that the focus has become so narrow that just one element (the learner) is focused on to the neglect of other important elements of his/her milieu (i.e., family, neighborhood, media, and those political, economic, and social values which, bereft of any spiritual anchors, have been corrupted). Any effort to assess instructional needs, organizational improvement, or broader educational reform must view the learner's social milieu as integral to the planning process.

The total control exercised by resourceful commercial forces has popularized profit-motivated thinking in all aspects of life in the West. Even the church has been unable to resist the resulting tide of consumerism and commercialism, which means that it also has lost its ability to lead society out of the mess created by human greed. Powerful multinational corporations have successfully injected the cultural onslaught into developing countries, most of which are worried about the long-term devastating impact of such a development on their people.

Some Muslim populations that are aware of such dangers have called upon their own governments to resist this cultural invasion by refusing to yield to western pressure. Any attempt to follow this advice is branded by western media as "the threat of Islamic fundamentalism." The multinationals' main goal is to avoid the "needless" expense of adapting their advertisements and bulk-produced wares to diverse cultural sensitivities. In essence, such international networks as CNN are serving these business interests by globalizing western socioeconomic and political norms and values, as hinted at in the Media Lab project of MIT (Brand 1987). Instead of guarding the interests of their people, governments and other public institutions have no option but to serve these narrow economic in-

terests. Public calls for ethical considerations in business activities are conveniently ignored by simply discussing them in the media to satisfy people and to pretend that something is being done.

Another issue concerning the IT milieu is the extent to which educational institutions limit the accessibility of outside unregistered learners who could benefit from such programs in the absence of such restrictions. In the academic milieu, teacher resistance to new technologies sometimes takes the same form as that put up by unions to fight the introduction of robots in manufacturing industries for fear of being replaced.

*Measurement.* All research measures change on the basis of one independent variable or another. Media research has historically passed through phases: the medium itself; uses of the medium; effects of the medium; and improvement of the medium (Wimmer and Dominick 1991). Current IT research is sporadic and diffused, and its tools are undeveloped.

The 1960s saw a plethora of studies in which media, or one aspect of it, were treated as an independent variable, while learning gain was used as the main dependent variable. Clark and Sugrue (1988) advised:

future research should aim to determine necessary conditions for learning, i.e., the unique aspects of a medium for the instruction delivered by the medium that models the cognitive processes required for successful performance on particular learning tasks.

There is now a demand that IT, like other branches of engineering, be considered an applied social science. Thus there is need for decision-oriented research rather than conclusion-oriented research. In other words, most IT research should be evaluative in nature and not geared to causality. From the Islamic view, it is essential that the effectiveness of the message and the medium be measured in terms of the extent to which it conforms to Islamic principles. This is a tall order. It is therefore the duty of Muslim instructional planners, designers, and evaluators to design clear general and specific measurement criteria. Any departure(s) by non-Muslim IT specialists from expected norms or criteria should not be attributed to them. Rather, Muslims should consider them their own failure.

*Possibilities.* As the problematic aspects of IT have been discussed, it is now appropriate to consider some positive future trends in the field. Ely (1991) lists the following prospects in this regard:

1. Diversity of student population will lead to development of alternative instructional delivery systems.

2. There will be an increased demand from business, industry and government for newer technologies, including those for war efforts, in view of the history of IT.
3. There will be new job opportunities for IT graduates, especially in the underdeveloped international market.
4. There will be an increased demand for satellite courses, as well as for training personnel in the use of interactive video and other state-of-the-art technologies.
5. More learners will demand access to electronic data bases in modern languages and other languages of the developing world.
6. More sophisticated expert systems will be more widely available (i.e., user-friendly, menu-driven, voice-touch).
7. Increased personal desire by learners to control their environments.
8. IT will assist educational institutions to meet the new demands made on them.

## Conclusions and Recommendations

The West has made tremendous scientific and technological progress. Its development in the hardware and software portions of instructional-communication technologies has enabled the West to control almost all aspects of life in the rest of the world, especially in the post-Cold War period. Muslims must learn the technology, how to manage it, and the relevant psychological bases and communication theories of message design.

In view of the inevitable linkage between people's beliefs, attitudes, and actions, the question as to who controls these communication technologies assumes momentous significance for everyone. This issue is tied integrally to the following questions: What are the values of the controlling nations, what message are they giving to the rest of the world, and what effect(s) is this having? This paper has attempted to address, from an Islamic perspective, these and other pertinent questions in regard to various aspects of instructional technology. The issues and concerns were classified under the following categories: humanity, message, medium, method, milieu, and measurement.

There is a great deal of commonality in the concerns related to IT when viewed from both the western and the Islamic perspectives. However, the narrow economic goals of the western view are in sharp contrast to the broader view of human life from the Islamic viewpoint.

In view of the BAB linkage (belief+attitude+behavior), I offer a few recommendations:

*Belief.* In short, this involves recognizing the importance of and the need for communication technology to be based on the principles of wisdom, good advice, and kindness (empathy) toward one's audience; the distinction between morality and technology; and the significance of both. The relevant factors here are the realization of the need for a) stable and universal moral values and of the speed and diverse dynamic capabilities of modern technology; b) a broad concept of personal and collective development that covers the spiritual, educational, sociocultural, political, and economic spheres; c) management skills in planning, organizing, implementing, and evaluating everything by Islamic principles of permissibility (*halāl*) and impermissibility (*harām*); d) effective communication among Muslim educationists and with others based on a positive and balanced attitude; and e) the conviction that whenever Muslims searched for hardware technology and engineering and software instructional technology, they led the world in contributing to all branches of science and knowledge in general.

*Attitude.* This element refers to the willingness and commitment (i.e., a timely transition from identifying needs to sincerely seeking their implementation) to realize and implement the value of effective instructional-communication technology. This change in attitude will enable us to see our general goals and specific objectives more clearly, critically, and analytically. Some of these objectives should include generating an awareness of IT's importance among economic and educational policy- and decisionmakers and convincing us that everyone, regardless of occupation or profession, is engaged in the learning and/or education process of someone else. All organizations, regardless of size (i.e., mosques, community centers, libraries and museums, business or government agencies), should become involved in education and training. And, finally, a sound plan and policy conducive to realizing the identified objectives must be designed and implemented.

*Behavior.* Actual implementation of the formulated plan in line with pertinent policies and measurement criteria involves updating or establishing anew relevant professional development organizations and institutions to train IT specialists; conducting seminars and workshops or providing formal instruction and training in up-to-date instructional/communication technology; and the timely and valid measurement of IT's impact on cognitive (belief), affective (attitude/policy), and conative (behavior) learning.

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