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## **AC 2011-230: THE LEADERSHIP OF SCIENCE AND ENGINEERING EDUCATION IN AFGHANISTAN**

### **Bahawodin Baha, University of Brighton**

Dr. Bahawodin Baha is a Principal Lecturer at the Faculty of Science and Engineering, University of Brighton, England. Following his graduation from Kabul University (KU) in 1980, he was an assistant lecturer at KU for a while. Then he was able to obtain a British Council Scholarship and completed his M.Sc. and Ph.D. degrees at the Universities of Salford and Brighton respectively. He has been teaching at the University of Brighton since 1989, where he has been teaching and conducting research in electronics, where he has published many papers on power electronics at high quality international journals and conferences.

In addition to his duties at University of Brighton, he has been helping the higher education sector in Afghanistan for the last seven years. He is conducting several DFID/British Council and the World Bank funded projects in Afghanistan. He has prepared several reports for the Afghan government and has published many papers at international conferences on how to improve technical vocational and engineering education in Afghanistan. He was a visiting scholar at Virginia Polytechnic, Institute and State University in the USA in 1991 - 1992.

### **Ogai Ahmadi, Kabul University, Afghanistan**

Ogai Ahmadi is a lecturer at the Faculty of Computer Science, Kabul University (KU), Afghanistan. She received her B.S. from Kabul University and was chosen on merit to be appointed as an assistant lecturer, and then was subsequently sent to Germany in order to complete her master degree in Computer Science and IT at Technical University of Berlin. She has completed her M.Sc. and returned back to KU where she continues her teaching and research duties. She has conducted several presentations in Afghanistan and Germany about the progress of computer science and IT in Afghanistan during the last seven years.

# **The Leadership of Science and Engineering Education in Afghanistan**

## **Abstract**

Managers and leaders, with the required skills and levels of competency are essential for any organization, especially for educational institutions and specifically in countries that have been devastated by decades of war and instability. This paper presents the results of an investigation on the leadership and management practices at higher education in the subject of Science and Engineering in Afghanistan.

## **1. Introduction**

The development in Science, Engineering and Technology has revolutionized the world and has significantly improved the quality of life in more developed countries. However, the real benefits of these developments have not reached the people of less developed countries. In particular, the impact is the lowest amongst war torn countries such as Afghanistan and Somalia. Since the intervention of the international community in recent years, attempts have been made to improve the education system in Afghanistan. However, the fundamental issues have not been fully resolved. One of the main issues that have been identified is the lack of strong leadership in the higher education sector, specifically at the major universities and educational establishments in the country.

The challenging world needs a new type of leaders, those who do not simply issue orders, but also empower others and create alliances to realize a vision, though such a vision has not been widely shared amongst the decision makers in Afghanistan, according to the author's experience. At present, higher education in the subjects of Science, Engineering and Technology is in a fragile state. Therefore, there is a need for strong leadership which can introduce major changes and establish links between these crucial subjects and development in the country. Such improvement can drastically affect the development in that part of the world, which is essential for revitalizing the economy and eventually improving the quality of life.

The author strongly believes that leadership ought to be one of the main themes beside other issues. This would help establish a viable higher education system in Afghanistan, which is capable of addressing the challenges the country faces.

This paper will present the results of an investigation on identifying the main obstacles in the management practices which are related to the improvement of the capabilities of senior managers at Universities in Afghanistan. Furthermore, recommendations will be made on how to apply international standards in the training, selection and recruitment processes of the senior managers. The aim of this work is to enhance the standard of education particularly in Science, Engineering and Technology.

## **2. Importance of Science, Engineering and Technology Education for Afghanistan**

It is well known that the subjects of Science, Engineering and Technology have played a significant role in the developed world in a number of aspects. Science and Technology have brought major improvement in the following sectors:

- Traditional agriculture practices have been changed and the food production has been immensely improved.
- Industries have been established.
- Mining has been explored.
- Transportation and communication has been improved.

It is regrettable that people in war torn counties such as Afghanistan have not been given the chance to prosper from such developments, resulting in most people living in poverty. The overall quality of education, specifically in Science and Technology, has not been very strong. One of the important issues that have been identified is the lack of strong leadership, with the required experience, skills and vision. This would greatly improve the teaching of subjects related to Science, Engineering and Technology in universities and higher education institutions in Afghanistan. After the establishment of strong leadership and management in the Ministry of Higher Education (MoHE) and universities in Afghanistan, appropriate steps should be taken to update the curriculum of many academic courses. This should include the following, which will enhance the education of subjects related to Science and Technology:

- The role of science and technology in economic growth (agriculture, natural resources, industry, services).
- The contribution of Science and Technology to education and training, health and employment.
- Science and technology for the protection of the environment.
- Science and technology for daily living, leisure, media and communication.

## **3. The Management at the Ministry of Higher Education (MoHE)**

The MoHE is the main body that implements the higher education policies of the Afghan government, which is supported by the international community. However, the vast majority of the managers at the MoHE, who are supposed to plan, improve and regulate the higher education system in the country do not possess the required skills. They are lacking the experience, and sadly, they lack the vision. Most of the managers at the MoHE have been appointed by various ministers throughout the last nine years on the basis of their ethnicity and political affiliation rather than their qualifications, experience and skills.

Similarly, the advisors who are supposed to guide the MoHE, are appointed in consultation with the MoHE and are supported by the international organizations, although they do not necessarily

have the required experience and skills in order to develop a higher education system that will tackle the problems that Afghanistan encounters currently. Such advisors are not appointed on the basis of merit but on the basis of having close ties with other senior officials in the Afghan government.

Furthermore, most of the rules and regulations have not been updated for decades. Due to the lack of competent management and lack of investment, progress in this sector has been limited.

#### **4. Appointment of Chancellors, Deans and Head of Departments**

The chancellors of the main Kabul based universities may be recommended by the MoHE, but are appointed by the president of the country, who is trying to make sure the population is properly represented. Therefore, sometimes they do not necessarily appoint the people with the right experience and skills in such critical positions.

Most of the provincial universities are established for political reasons without a coherent plan for the whole country. Such universities do not possess the required facilities in terms of learning resources, nor they have academics with the suitable qualifications, experience and skills which are required.

The deans are proposed by the chancellors of the universities and are approved by the MoHE. The head of departments are nominal posts and, realistically, individuals in such posts do not have much power and control over the issues in their respective departments. In most cases, people do not want to volunteer themselves for such posts and these posts do not carry any incentive.

The systems to appoint and promote academic staff have not been updated for decades and sadly such systems have been manipulated by certain individuals within the universities. Consequently, qualified and experienced individuals, who have the potential to become leaders in their fields, are excluded from time to time.

The universities are not financially independent, as their funding is strictly controlled by the government and even small claims are processed by the Ministry of Finance (MoF).

The government has established a new organization which is called the Civil Service Commission which aimed to introduce a major reform of the government ministries and other institutions, including universities. However, the people who introduce such changes do not necessarily possess the required experience and skills to carry out the relevant changes.

#### **5. Cronyism, Nepotism and Financial Gains**

It is a sad fact that cronyism and nepotism are some of the main factors behind the slow progress in all the Afghan institutions, including the MoHE, universities and other higher education institutions in the country. When the government appoints someone to senior posts, they should

pay attention to their professional background and their education. However, it is regrettable that such principles are not applied as most individuals are appointed on the basis of their links with senior managers, not according to their knowledge, experience and professional skills.

## **6. International Donors**

The lack of real investment in higher education is another problem which needs to be addressed. The two major donors which support the higher education in Afghanistan are the World Bank and the United States Agency for International Development (USAID). The World Bank has a programme which is called Strengthening Higher Education Programme (SHEP) which is managed by the Afghan government. One of the main components of this programme was to train more than one hundred thirty junior lecturers at MSc level in the USA, UK, Germany, Thailand and Indian universities. Part of the grant was also intended to be spent on infrastructure at selected universities in Afghanistan.

USAID had two programmes, the Afghan Equality Alliance and Higher Education Programme (HEP), both of which were managed by a US company, called the Academy for Educational Development (AED). Both of these USAID programmes provided limited low-level English language, ICT and other ineffective training. However, both of these programmes and other contracts of AED were suspended by the USAID recently [1].

The Afghan government does not have access to huge amounts of funding, which would be able to revitalize the higher education and other sectors in Afghanistan.

## **7. Conclusions**

The education system was heavily misused between late 1980's until 2003. As educational values evaporated from the institutions, most of the appointments of the chancellors and deans and the promotions of academics from lower to higher ranks were based on political affiliation rather than academic excellence. Therefore, the quality of education has gradually degraded, and consequently, the knowledge and skills of university graduates have deteriorated significantly, affecting all sectors in the country.

To establish a viable higher education in the country, the following problems need to be tackled immediately:

- a. The high school graduates are weak and most of them have no or little exposure to the applications of Science and Technology.
- b. Priority needs to be given to education in subjects related to Science and Technology, since such subjects have proved effective for societies in the past and the Afghan people need to learn from history.

- c. Traditional teaching methods, i.e. just lectures with limited problem solving need to be changed and fundamental concepts should be taught properly, supported by tutorials and laboratory work.
- d. The resistance of senior academics to change their academic practices is another major challenge that needs to be addressed,
- e. The lack of suitable accrediting bodies that evaluate the programmes, recommend methods of delivery, ensure appropriate qualification of academics and ensure the universities are equipped with appropriate facilities.
- f. Integration of experimental work with theory needs to be at the core of the curriculums to overcome the lack of appropriate practical skills in the industry.

### **7.1. Further Recommendations**

The education system in Afghanistan has been misused for political short-term gains during the last two and half decades, and this has subsequently resulted in complete devastation of the whole infrastructure in the country [2]. In order to overcome this catastrophic destruction, the authorities in Afghanistan should make every effort to isolate all political activities from higher educational institutions in the country. Furthermore, the present and future generations of Afghanistan should make every effort to keep education and politics separate and follow international norms and standards in higher educational institutions.

Currently, depoliticizing the education system is not an easy task in Afghanistan; however, it is recommended that decisive steps are taken as described below:

- Political parties should be encouraged to refrain from using higher educational institutions throughout the country for political activities.
- The managers at the MoHE, ministry of education and parliament should receive adequate and effective training on the importance of educational development, to enable them to improve the current education system in the country.
- A subject that discusses the role of law and responsibilities of individuals within a society should be included in the curriculum of all courses throughout the university.
- Media services such as the radio and TV should be encouraged to broadcast programmes which will help to depoliticize the educational system. This may be achieved by inviting Afghan and non-Afghans experts on how to introduce international standards into the education in Afghanistan.
- The management at the MoHE and other higher education institutions needs to be significantly improved. The management at MoHE and Kabul University (KU) is

not very strong; the management at Kabul Polytechnic University (KPU) is non-existent and outdated. It is impossible to make any progress under the present management at some higher education institutions in the country.

- A regulatory body needs to be established to monitor the standards of all courses throughout the universities in Afghanistan including any private institutions that may emerge in the future. This is a common practice in the modern world and can ensure that high standards are maintained.
- Awareness seminars and workshops should be held for all senior managers in the MoHE, KU and KPU on how to introduce major reform into the educational system and hence to integrate international practices with the education system in the country.
- The management in all the ministries including MoHE, KU and KPU should identify and prioritize projects within higher education sector, and then ask USAID and other donors to conduct such projects.
- Opportunistic foreign companies should be stopped and aid organizations should be discouraged from using Afghanistan for huge financial gains so that the aid from the governments is properly utilized. Also it is essential that they are stopped from conducting ineffective projects in all sectors, including higher education in Afghanistan. The output of the following USAID and other agencies funded projects should be fully assessed by the Afghan government and less effective projects must be identified. USAID should be urged to redirect the resources from less effective to more effective projects in the higher education sector.

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