

## UNIVERSITY- INDUSTRY PARTNERSHIP FOR DEVELOPMENT OF KNOWLEDGE

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### ABSTRACT

*Advancement of knowledge, innovations in the field of technology and race of the best have changed the role of higher education. Currently, higher education does not mean a degree but skill and knowledge of how to use skill for the advancement. In the 21<sup>st</sup> century, the function of higher education is to produce such skilled personnel who must be able to utilize his/her knowledge in the real situation. National educational policy (2009) states, changing innovation processes and the evaluation of the relative contribution made by the private and public sectors have emphasized the need for strong industry-university linkage, allowing both sectors to interact and collaborate on joint project. In Pakistan, Higher Education Commission (HEC) and educational policies acknowledge that industry-university cooperation is the need of the time. Even now, higher education degrees are completed without research in industry. For development, it is necessary that research in higher education must be linked with local industry and need of time is to establish research centers which must be responsible for assisting research and provide linkage between higher education and industry. The present study explores the opinion of academicians about the university-industry cooperation. In this study, the words cooperation, partnership and relation are used as synonyms. A questionnaire was developed for knowing their opinion about university-industry cooperation. It is found that in Pakistan, university-industry cooperation is weak while university-industry cooperation is necessary for the development of knowledge.*

**Keywords:** Higher Education, Higher Education in Pakistan, University-Industry partnership

### INTRODUCTION

In the current scenario, higher education is a mean for generating new knowledge and is considered a change agent. It is higher education that does multi tasks at the same time. Higher education plays a vital role in the economic development through innovations, as well as it change the set patterns through research, testifies the old notions and brings ultimate truth for man. In the changing environment, higher education means to train the individuals within the cultural norms for challenging environment around the global setting. It is expected that higher educated individual will be a source of knowledge and will be beneficial in all of its shapes. Today, higher education is different as it was in the past. Creation of new knowledge, innovations in the field of information and communication technologies (ICTs) and the race of doing “something new” has changed the whole face of higher education. Higher education institutions are under pressure due to these changes. Now it is expected from an individual, after getting higher education, will add some knowledge in the existing knowledge which ultimately, improve the life standards and will open new horizons for further knowledge.

Research work is a compulsory component of higher education and provides new tracks for adventures. Higher education and industry partnership has a long history but currently, higher education and industry work hand in hand, higher education institutions create new knowledge and industry provides space for checking the validity and reliability of this knowledge. Industry provides a platform for the application of higher education, where new knowledge becomes mature and then serves the humanity without any color and race. The collaboration between higher education institutions and industry benefits both, the higher education institutions and industry.

In Pakistan, after completing higher secondary school certificate (HSSC)/Intermediate level education, students enter into higher learning. The subjects which students learn at HSSC level provide base for higher learning, while at higher learning institutions, students are offered the same subjects with broader scope. Owing to many reasons, less than 5 percent students enrolled in higher education. In the last decade, the higher education institutions were criticized due to their educational system. It was said that higher learning institutions teach on the traditional basis and award degrees without checking the students on international standards. Even in the science disciplines, such as mathematics and physics, students got degree without practical work. There is a weak relationship between higher education institutions and industry. Government of Pakistan acknowledges the importance of higher education and defines many strategies to improve the set standards of higher education. To monitor the working of higher learning institutions, government of Pakistan established Higher Education Commission (HEC) in 2000. National Education Policy (2009, p. 55) envisages that HEC was created to serve as the apex body for all matters pertaining to policy, plans, programs, standards, funding and oversight of higher education.... and transform the higher education sector as an engine of growth for the socio-economic development. HEC introduces the culture of research in higher education institutions and emphasized the strong relationship between higher education institutions and industry. Industry is a place where students can apply their theory and can found the applications in reality. With the efforts of HEC, higher education institutions recognized the value of industry and strengthen the relationship with industry by involving the students in real situation in industry. Higher education institutions established research centers; these centers are responsible for the standards of quality education and publish the research work, which offer new dimensions for future. Still, there is a lack communication between higher education institutions and industry. Ahmad and Junaid (2008) states that University-Industry (UI) collaboration is of vital significance for the promotion of educational institutions, growth of vibrant industries and development of national economies. HEC is working in this regard and serious efforts are underway for the promotion of research culture and collaboration between higher education institutions and industry.

## LITERATURE

The rise of internationalization, globalization of economics, knowledge and culture, and the concept of lifelong learning and continuing education give a distinctive character to higher education, both in the international and national contexts (Isani & Virk, 2005). National education policy (2009) says that good quality, merit-oriented, equitable and efficient higher education is the most crucial instrument for translating the dream of a knowledge –based economy in to reality. National education policy (1998, p.67) highlights that higher education institutions must be responsive to the challenges of a rapidly changing and challenging new world. The key responsibility of higher education is to train individuals to face the challenges of the changing world. Commission of the European Communities (2005) articulates that universities should produce human resources trained to meet the needs of the economy, to

concentrate on practice and on lifelong learning. The quality of higher education is extremely important for the development of societies with an aim to prepare knowledge and skilled based human resources. However, some critical problems are observed in Pakistan with increase in number of Ph.D students, such as lack of research skills and aptitude, motivation and passion (Aadil, Khan & Fahim, 2010). In Pakistan, Higher Education Commission (HEC) is responsible for the development of higher education. The Commission also functions as a link between higher education institutions and the surrounding society, making sure that the institutions work in the same direction as the industry and employment markets (Nordic Recognition Information Centres, 2006).

Around the world, the aim of higher education is different from the school and college education. Higher education provides new innovations through research and without research higher education is nothing. Higher education train individuals for the market and help in solving the problems through new knowledge. The development of a country does not depend only on the natural resources it possesses, but is largely dependent on the quality of its trained manpower and judicious development policies (Rahman & Choudhary, 1998). The higher education institutions are criticized that these institutions are producing degree holders without proper training for the global market. Students in publicly funded institutions get an education of mediocre quality, which does not prepare them to participate effectively in the economic, political and social life of the country, leave alone the competitive global economy (Government of Pakistan, 2002). Siddique (2007) states, a good research may help in describing, understanding, interpreting and evaluating a phenomenon. Sometimes, it helps us to explore alternatives to improve the existing situation. This means that any research study should have a purpose to it. Industry is the only place where higher education can be implemented in real situation, but in Pakistan, there is a lack of university-industry relationship.

### **University-Industry Cooperation**

The collaboration between university and industry is the need of the time, because university is a place where knowledge grows and industry is a place where this new knowledge is applied and gives output for the society and the nation. Business Higher Education Forum (n.d) states the importance of research collaboration in the following words:

Research collaboration is not an end in itself. It is a means by which academic and industry scientists can advance their own research and companies can move new products more quickly into the marketplace—serving the interests of both sides, the pursuit of new knowledge, and society at large.

In the current situation, where the entire world has become a globe. The collaboration between university and industry is beneficial for both. Universities and business will need to cultivate mutually beneficial and lasting relationships .... robust high-quality, long-term relationships, based on two-way investments of time and resources, are becoming essential to understand, influence and improve the interactions between both sectors (Business/Higher Education Round Table , 2002). The benefit of increasing efficiency and effectiveness equally weighs as one of the reasons for pursuing partnerships (Majumdar, 2010). The strength of universities lies in their science base; the strength of industry is technological development. Today the challenges facing both organizations have never been greater and both must adapt to rapidly changing circumstances (Davis, 1996)

About the collaboration between university and industry in Pakistan, Ahmad and Junaid (2010) states that:

Pakistani firms generally develop very few new products. At the same time, universities in Pakistan have not developed the culture of genuine research. Consequently, no such effective partnership between the two entities has been materialized in the country, since its inception. As a matter of fact both the institutions failed to understand the significance and potential of cooperation.

Ahmad and Junaid (2010) further states that unless and until the space between academia and industry is bridged attaining of high standards in the working of both the university and industry and realization of the goals of national economic development would be next to impossible. Virtually every industrial country is moving to make university-industry links a centrepiece of its innovation systems, and the notion of a 'triple helix' – representing the symbiotic relations linking government, universities and the business community – has acquired wide currency (Centre for Higher Education Transformation, 2011).

### **University Benefits of Collaboration with Industry**

For higher education institutions, industry is the only source where these institutions can train their graduates by utilizing the sources of industry. For universities, industry can work as a laboratory where they can check the validity of their knowledge. For universities, working with companies allows them to gain access to external sources of expertise and funding (Business Higher Education Forum, n.d).

### **Industry Benefits of Collaboration with University**

For industry, it is very important to check the quality of its products. Higher education institutions can help them in attaining the standards of quality through their knowledge. For companies, major benefit of research collaborations is the opportunity to leverage research resources to gain access to external sources of expertise in a cost-effective fashion (Business Higher Education Forum, n.d)

## **OBJECTIVE OF THE STUDY**

This study was about the role of higher education in the present age and the need of the University-Industry cooperation for the development. The objective of the study was to find the need of University-Industry cooperation for research and development.

### **The Study**

#### **Sample**

The departments of physics, computer sciences and mathematics were selected from Lahore and Islamabad. The basic idea behind the selection of these departments was that, these fields of sciences are considered more research oriented. The sample for the study was the 100 academicians taken from the Department of Physics, Computer Sciences and Mathematics, selected through convenient sampling technique.

#### **Instrument**

A questionnaire was developed on five point Likert scale for knowing the opinion of academicians about the university-industry collaboration. There were five options (Strongly Agree= SA, Agree=A, Uncertain= UNC, Disagree= DA, Strongly Disagree= SDA).

#### **Validation of the Questionnaire**

For validation, the questionnaire was presented to 20 senior faculty members of physics, mathematics and computer sciences. The senior faculty members pointed out some irrelevance statements which were rephrased.

### Reliability of the questionnaire

For measuring reliability of the questionnaire, it was administered on 30 faculty members and Cronbach's Alpha was calculated, it was found 0.65.

### ANALYSIS OF DATA

For analysis, chi-square technique was used. Each statement of the questionnaire was checked on significance level 0.05.

Item #	Statement	SA	A	UNC	DA	SDA	$\chi^2$
1	University-Industry partnership is a source for the advancement of knowledge.	25	75	0	0	0	212.5
2	Industry helps university in testing new knowledge and highlights the deficiencies of new knowledge.	12	72	16	0	0	179.2
3	University-Industry partnership settles the financial matters through utilizing the resources of each other.	45	55	0	0	0	152.5
4	University-Industry partnership is beneficial for both University and Industry.	26	66	8	0	0	154.8
5	University-Industry partnership can be a source of exchange of personnel for mutual benefits.	60	40	0	0	0	160.0
6	In Pakistan, there is a weak relationship between university and industry.	15	70	15	0	0	167.5
7	University-Industry partnership can polish the potential of students through involving them in the real circumstances.	25	62	13	0	0	131.9
8	The collaboration between university and industry is necessary for development.	54	40	6	0	0	127.6
9	University-Industry partnership illustrates various dimensions of adventures and informs about weaknesses and suggests ways for promotion of the knowledge.	48	50	2	0	0	140.4
10	Researchers must be facilitated for research work in industry.	45	50	5	0	0	127.5

df=4 table value of  $\chi^2$  at 0.05 = 9.488

### DISCUSSION

Creation of new knowledge is a source for survival of a nation in the 21<sup>st</sup> century, and universities are responsible for creation of new knowledge. The relation between university and industry is a key to success. The respondents of the study were of the opinion that university-industry cooperation is a mean for advancement of new knowledge, industry is a place where new knowledge can be tested and its potential can be realized. The respondents agreed that through university-industry partnership, financial matters can be settled which ultimately beneficial for both. In Pakistan, there is a weak relation between university and

industry. The respondents supposed that university-industry relation polish the talent of young people and gave them confidence for actual workplace. To face the challenges of 21<sup>st</sup> century, university-industry is a need of the time, and university-industry is necessary for development. University-industry provide new paths for research, the respondents agreed that the researchers must be facilitated for working in industry.

## FINDINGS

University-industry collaboration is a source of advancement of knowledge, while this relation is weakens in Pakistan. Industry offers opportunities to check the authenticity new knowledge and highlights the deficiencies in this new knowledge. The respondents were of the opinion that University-Industry collaboration is beneficial for university as well as for industry. Industry works as a laboratory and polishes the potential of the youngsters and prepares them for working in market. University-Industry collaboration gave confidence and perfection to the graduates and enables them to survive in the global market. In Pakistan, lack of opportunities for working in industry is a hurdle in the way of research; this gap must be fulfilled to meet the challenges of the 21<sup>st</sup> century.

## CONCLUSION

University-Industry is essential for the advancement of new knowledge. University-Industry can help the youth to apply their knowledge and understand the underlying concepts, which ultimately helps university as well as industry. University-Industry relationship highlight the weaken areas and also provide path for further development. Pakistan, there is a gap between University-Industry, which creates difficulties for researchers. It is need of the time to make University-Industry relationship stronger for generating new knowledge and providing opportunities to youth to apply their knowledge and understand in a better way.

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