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Obstacles in the Enhancement of Technical Education in Pakistan: Views and Reviews

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Abstract

Most of the policy makers of developed and developing countries declare Technical Education, a master key for the swift economic growth of a nation. Regrettably, the evidences show that Technical Education could not play the expected role in the industrial and economic growth of Pakistan. The study aimed to diagnose the causes of not achieving set targets of Technical education in Pakistan and to suggest the solutions to these problems. The qualitative data were collected through thirty (30) semi- structured interviews of experts, comprising alumni of Diploma of Associate Engineers (DAE), faculty members, policy makers and other experts of Technical Education in Pakistan by using purposive sampling technique. The data analysis reflects that, the dire need to improve funding for Technical Education is quite indispensible, the curricula is outdated and need to be revised periodically, the improved coordination between different stakeholders of Technical Education can uplift the teaching- learning environment. The study further indicates that, the industry-institute linkage is weak in the country, it is suggested that an effective industry-institute linkage is necessary to improve quality of Technical Education in the country, participation of private sector in Technical Education needs to be improved and system should be developed for periodic revision of curricula and organized professional/ industrial training of students and faculty members. An independent University of Technical Education should be established to enhance the opportunities of higher Technical Education in the country.

Keywords: Technical education, obstacles, enhancement, key-factors, global trends.

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Introduction

With advancement in technology our native planet Earth has become a global village, the effects of these developments in technology are being transferred from one country to another rapidly. The world of work is demanding more knowledgeable and skilled man power to run the industry, that's why almost all developed and developing countries are concentrating more and more on development of Technical Vocational Education and Training (TVET). To control the increasing un-employment, promoting entrepreneurship (self-employment), alleviate poverty and for industrial/economic growth; Technical Education is being used as a master-key (Quisumbing, 2013. Pg.26). Javied and Hyder (2009) have expressed that, the term Technical Education refers to post-secondary courses of study (Diploma of Associate Engineer) and practical training aimed at preparation of technicians to work as middle level supervisory staff; whereas the Vocational Education refers to lower level Education and training for the preparation of semi-skilled and skilled workers in various trades. The duration of Vocational and Technical Educational programs ranges from three months to three years, similarly entry qualifications also vary according to the program. A three year course known as Diploma of Associate Engineer (DAE) is main program of the Technical Education in country.

The education sector in Pakistan has been growing steadily over the past seventy years; Gujjar and Chaudhry (2009) state that the Technical Education could not spread out at the same frequency, as general education. Pakistan is facing an ever increasing ratio of un-employment in youth, while the industry is lacking for appropriately trained manpower this gap can be covered by focusing on quality Technical Education in country.

> "We have tried to educate the mind but failed to educate the emotions and the will. Overemphasis on knowledge and skills has led to the neglect of values and attitudes. The product of our educational system is an informed, knowledgeable and competent professional who may not be mature or emotionally stable, an intelligent and informed individual, a financial wizard who may turn out to be corrupt or ruthless, a skillful and competent technician but not necessarily an honest or responsible member of the workforce". (Quisumbing, 2013.Pg. 26).

Today's global and knowledge-centered society need to be values-based, committed to the respect for humanity, human dignity, and work as a source of self-actualization and self-satisfaction, economic and social development. Technical Education should include values education and must focus on the needs and potentials of a person in the society too (Quisumbing, 2013. Pg.38). this demands a holistic and integrated approach to Technical Education and development.

As the today's global and knowledge-centered society swings from a traditional to the modern lifestyle through the introduction of new technological trends, it demands for a more in-depth understanding and know-how about technology. This highlights more mandates for skilled manpower equipped with the ability and the competitive edge in performing the tasks required, of these emerging technologies. Technical Education gives emphasis on the development of a knowledge economy. Technical Education is playing a vital role in developing the skillfulness and work qualifications to adapt to the modifications brought about by this enhancement of opportunities resulted by borderless exchange of economic activity (Majumdar, 2010).

Organizations, such like UNESCO (and UNEVOC) with the collaboration of other institutions such as World Bank, International Labor Organization and Inter-Regional groups are working to attain the maximum benefits of Technical Education as a means to improve the lives of the people. In the recent days, skills acquisition and development is considered as critical to educational development, labor market inclusion and economic growth (Majumdar, 2008).

Globaltrends regarding enhancement of Technical Education.

The system of Technical Education is undergoing major structural changes, according to Adiviso, (2009). These changes have emerged from intervention of various nationsand involvement of international organizations. Major developments have been made in the following aspects:

Curricula revision. Curricula are being modified and being reformed as demand driven, with special focus on skill-competitiveness and employability of the graduates.

Standards setting and development. An-other factor being focused is setting of standards to promote the "adaptation and development of best practices" in the field. This is the basic requirement of projects which are funded by foreign donor agencies.

Social marketing of Technical Education. Career guidance and social marketing have been used as tool to enhance social image of Technical Education, promoting social equity and reduce poverty from the society.

Facilities, modernization and maintenance. The reforms are being made for the improvement of its facilities and equipment. Efforts are being made to match the training environments with the actual workplace.

Increasing access and gender development. The reforms are being made to improve the access of Technical Education for both male and female participants.

Majumdar, (2010) has further discussed that in the Asia-Pacific region specifically some important concerns of governments regarding Technical Education are; to improve job opportunities for Technical Education graduates, to overcome staff shortage, arrangements of training at industry and motivating workshops (for staff), update curricula to meet market needs to enhance industry-institute linkage, up gradation of Technical Education infrastructure, and students counseling.

Problems and issues of Technical Education in Pakistan

It has been pointed out in MTDF 2005-10 of Pakistan, that Technical Education is facing the following main problems in Pakistan:-

i) Lack of industry-institute linkage.
ii) Low enrolments
iii) Shortage of well trained and qualified teachers
iv) Out-dated Curricula
v) Changing requirements for overseas/local employment

Shah, (2009) has reported that the buildings, budget, transport and hostels of technical institutions are not sufficient; the facilities of latest reading material, online research, guidance and counseling are not up to mark. Teachers lack in industrial exposure and proper experience, graduates or pass outs are not recognized and accepted in industry. Same findings have been presented by Adviso, (2009). Shah, (2013) has further reported that the curriculum and examination system are out dated, theory oriented, less focused on practical technical know-how and there is no liaison between technical institutes and industry. A research study conducted by National Institute of Science and Technical Education, Islamabad for UNESCO, (2014) on “Technical and Vocational Education in Pakistan at Secondary level”, shows that the linkage with industry is very weak except in Punjab. There is no proper arrangement of faculty development, Technical Vocational Education and Training (TVET) in Pakistan needs to plan and develop a proper system and infrastructure for pre-service and in-service teacher training.

Likewise Shah, (2013) has reported that policies set realistic targets but plans made, are not realistic and research based, relevant faculty is not consulted in process of plan preparation. No proper system has been developed for quality management and there is lack of co-ordination at national level. Political instability, adhoc-ism, leakage of funds, improper utilization of resources and improper monitoring has also been reported as root causes for the deterioration of Technical Education. "Globalization of economy, and rapid technological innovation challenge todays workforce to prepare for continuous change, due to technological innovation and restructuring of the workplace, many workers have found that their current technical skills are obsolete" (Hassan, 2010. p-68). Shaikh and Shah (2010) in their country paper "Restructuring of TEVT in Pakistan" have pointed out that Technical Education needs more funds as compare to general education. Shortage of funds always remained major obstacle to transmit necessary training for the students cooping the quality skill standards and job market demands, where a greater amount of funds are required for replacement or restoration of old/outdated machinery and equipment, he further pointed out that; in Pakistan, almost 2.2% of GNP is allotted to Education Sector, from it Technical Education receives only 0.065%.

Without appropriate planning, promptly increasing population is also a challenge; it may result as arise in unemployment percentage in Pakistan. The young population can be turned into a useful resource through better Technical Education; it has been acknowledged that Technical Education and training is considered as essential pre-requisite for the socio-economic development of a country (Rutayuga and Kondo, 2004).

Right from the independence of Pakistan, the significance of Technical Education has been felt and different plans and policies have been announced by governments from time to time, but the results were not as should be. What are the obstacles in the implementation of these plans for enhancement of Technical Education in country? What are the global trends regarding Technical Education? What steps should be taken to overcome these obstacles? These are the questions, researchers should search and experts should answer, for better future planning and development of the country. This study is an effort in this way to find out answers of above discussed issues. This study will be useful for the national planners and policy makers, in better planning and building-up the framework needed to enhance the quality of Technical Education in the country, as a result produce skilled human resources, make them job market oriented and improve the country situation regarding unemployment.

Methodology

This study is qualitative in design, it focuses to diagnose the causes for not achieving quality of Technical Education in Pakistan and to find out the solutions of these obstacles. Data were collected through semi structured interviews from the determined sample. The study was conducted on a purposive sample of thirty experts, (to give proper representation to federal and the provinces areas/institutions, six experts having at least ten years' experience of Technical Education working in national level institutions, ten experts with same experience of Technical Education working at provincial TEVTAs, eight principals/ senior faculty members of different technical colleges with at least eight years' experience, three policy makers of ten years' experience at planning commission of Pakistan and three alumni of Technical Education with at least eight years' field experience were included in sample. The minimum qualification criteria set for participants was BSc engineering /B.Tech. or Master degree in any other subject). The interviews were audio recorded by the researcher himself with the help of two associates. These associates were junior PhD scholars and they were trained for this purpose. The duration of these semi structured interviews varied from forty (40) to fifty(50) minutes. The core questions in interviews were about the causes for not achieving the required quality of Technical Education in the country and suggestions for the enhancement of Technical Education in Pakistan. The interviews were conducted with prior information and no hidden or personal question was asked during interview, any question/discussion regarding religious, race, provincial and gender biasness was avoided.

At the end, these interviews were transcribed, then themes were generated on the basis of responses of each respondent, then accordingly if responses were same the responses with similar themes were merged and general themes were adopted. Then these themes were coded and transcribed, at the end the number of respondents supporting the themes or against the themes were calculated. All the process of preparation of questions and data analyzing was supervised by an expert of statistics and validated by three (Ph.D.) experts of research at every step to avoid any sort of biasness and enhance validity of the research.

Results and Discussion

A variety of "causes for not achieving the required quality of Technical Education in the country and suggestions for the enhancement of Technical Education in Pakistan" were pointed out in the interviews by different experts, the main themes/views of above said experts are being discussed briefly:-

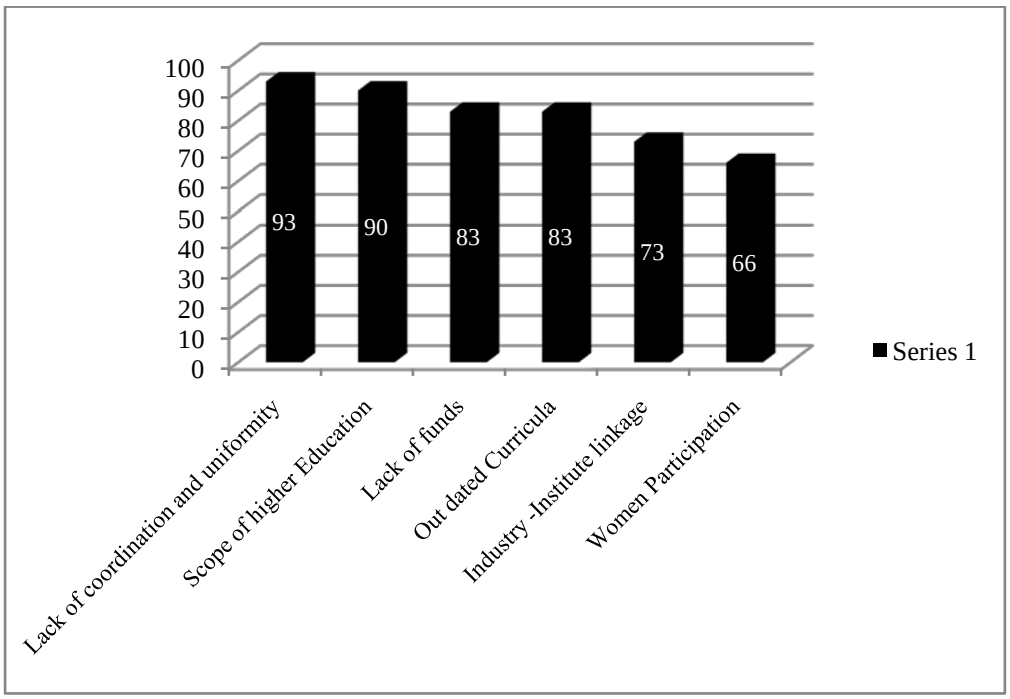

Figure Main obstacles in the enhancement of technical education

Lack of coordination and uniformity

The country is facing political instability which results as inconsistency in planning, there is nonexistence of long term planning in the country, in the experts opinion there is lack of coordination and uniformity among different departments at provincial and national level, this lack of coordination and uniformity is itself a hurdle in implementation of planning. Respondents emphasized on restructuring and reconstruction of National Vocational and Technical Training Commission (NAVTTC) as a dynamic, influential and autonomous body which can work freely without political interference, for long term and short term planning, legislation, implementation, monitoring and coordination between different national and provincial bodies for TVET. The same has been highlighted by Shah, (2013). The participants pointed out that after the 18th amendment in constitution and delegation of powers to the provinces, NAVTTC has lost its influence and importance, but dire need is felt for such body at national level.

Scope for higher education

Scope for advanced professional education is restricted and limited due to non-acceptance of the equivalence of degrees and diplomas of Technical Education by different departments and universities especially Pakistan Engineering Council (PEC).As National Qualification Framework (NQF) have been developed but yet need to be implemented, the respondents were with the view that proper implementation of NQF can be helpful in improving the intake. It will open the doors for diploma of associate engineer (DAE) level education for students of vocational education; on the other hand it will also open the doors of higher education and equivalence for the pass outs of DAE and B.Tech. The respondents suggested that; NQF should be implemented in the country, as soon as possible. To attract talent toward technical education it is also necessary to linkup competencies and skills taught, with general qualifications that reply both job market needs and quality assured qualification requirements so that, the graduates may join job market or move ahead for further education. This will be helpful in improving intake of technical education at all levels especially for DAE program. Furthermost respondents were of the opinion that, most of the developed countries and many under developing countries too have more than one sovereign universities of technology, in Pakistan there is no university of technology, Government should resolve this issue without any delay.

Lack of funds

Respondents were also of the opinion that technical education needs more funds as compare to general education. Lack of funds always remained major obstacle to transmit quality education and training, where comparatively more funds are required to revamp and replace old/outdated machines and equipment along with the costly consumable material required for practical demonstration and students' practical work. The same is supported by Shah (2013). The ground reality is that share of funds for technical education as compared to general education, always remained insignificant in country, so governments should allocate more funds for this purpose.

Out-dated curricula and staff

The respondents indicated that the curricula of technical education is not as per requirements of job market, it is out dated and requires to be restructured and revised according to new trends and needs of market. Technical colleges in the country are facing lack of professionally trained faculty, conditions of infrastructure at colleges of technology is not satisfactory. As discussed above respondents were of the opinion that; to cope up the challenges brought by the rapid technological advancements and changing global scenario it is necessary to equip the students with latest technological knowledge and skills. Maximum of the respondents consider that, curricula of DAE should be reviewed and revised periodically to meet the requirements of rapid technological advancements. The same issupported by Shah (2013). Many of the respondents consider that, skill standards should be developed immediately with consultation of industry.

Industry-institute linkage

Most of respondents were with the opinion that; Proper arrangements for professional and industrial training of students, teachers and lab staff is necessary to make them ready and equipped to meet the challenges of new work dimensions. All this is achieved world-wide with the coordination of industry, but the Industry-institute linkage in Pakistan is weak. Most of the respondents were of the opinion that; industrialists and business men are reluctant to spare or provide money and time required to support the public sector technical institutions, whereas on the other hand administration and faculty of technical colleges is hesitant to accept the role of industrialists in administration or decision making bodies of their institutions, the respondents suggested that both at national and provincial level proper and balanced legislation should be done to convince both stakeholders to support each other and play their role in national economic development. Industrial support may be acquired in the form of practical training at industry as in German dual model; respondents were of the view that around the globe, problems of changing needs of job market, skill gaps along with shortage of funding are tackled by improving Industry-Institute Linkages, Same were the findings of Majumdar, (2010). Many of the respondents consider that, skill mapping needs to be performed and skill standards should be developed with consultation of industry.

Women participation

Women are more than fifty percent of the Pakistani population but the ratio of female students in technical education is very low, situation needs to be and improved. Some respondents stated that their role in economic development should not be overlooked; the present ratio of females' technical colleges and students enrolled is very small, new colleges and technologies should be introduced after skill mapping at local level, financial scholar ships, hostel facilities and other such reforms should be introduced to improve women participation in Technical Education.

Recommendations

- Proper legislation should be introduced to improve the participation of industry for enhancement of Technical Education and Proper mechanism should be developed for regular professional and industrial training of students, teachers and supporting staff.
- All the federal and provincial governments should increase funds for Technical Education in their respective budgets.
- Curricula should be reviewed and revised periodically to meet the requirements of rapid technological advancements.
- At least one University of Technical Education should be launched in every provinceand NQF should be implemented in the country; without any more delay,to enhance the scope of higher education for graduates of Technical Education.
- The reforms should be introduced to improve women participation in Technical Education.

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