

Textile Education in Pakistan

by Dr. Tanveer Hussain

The demand for well trained personnel for a growing textile industry was the basis for the first undergraduate-level textile educational institute was founded in Faisalabad on 12th of October, 1959. Prior to that a diploma-level textile institute had existed in Shahdara, Lahore. Although, the face of the Pakistani textile industry has altered dramatically over the decades, the need for qualified, well-educated individuals has remained constant. To keep pace with the dynamic nature of the industry and ever-increasing worldwide competition, it has become imperative to train and prepare textile professionals for their chosen career in the industry of Pakistan, that is global in its scope, and becoming more and more technical in nature. This article is based on the strength and weakness of the textile education in Pakistan.

Today's textile and clothing industry of Pakistan

According to Saurer's latest World Survey on Textile and Nonwovens industry, the Pakistani textile sector comprises approximately 8,800 units, of which about 1,220 units are in ginning followed by 450 spinning units, 700 knitwear units, 730 finishing units and 5,000 units with roughly 450,000 sewing machines engaged in garment manufacturing and the balance is in terry towels, weaving and canvas. Pakistan's textile industry is the largest industry of Pakistan accounting for approximately 63% of total national export earnings. Although many public and private sector organizations put a lot of effort to gather data about the textile industry, it is still marked with inaccuracies, discrepancies, inadequacy and obsolescence.

Where the Pakistani Textile Industry would go in Future?

The existing textile industry of Pakistan encompasses mainly the preparation of natural fibres, the production of man-made fibres, spinning, weaving, knitting, dyeing and finishing, and garment manufacturing. All these processes have been known to the industry for a long time with continuing advances in productivity, product quality and resource efficiency.

In the future, the traditional textile industry in Pakistan will continue to improve in terms of market access, timely delivery to markets, flexibility, product quality, productivity and resource efficiency. Additionally, the textile industry in the future should move towards more promising textile technologies, which include but are not limited to nonwovens, technical textiles, but also specialized coatings, micro-encapsulation, enzyme treated and plasma based products and nano technologies. The industry should move slowly from commodity products to more knowledge-based specialty products oriented towards niche market segments, to avoid fierce commodity price competition. Moreover, the industry should move steadily from mass production to customization, which will require better marketing skills, exploiting and managing customer needs and preferences, sophisticated CAD/CAM systems, flexible customized production systems, intelligent logistics, and internet-based communication systems between manufacturers, distributors and end users.

Human Resource requirement in the industry

Textile Vision 2005 pointed out following issues and requirements of human resource development in Pakistan. For example, the graduates in yarn manufacturing should be equipped with the knowledge of modern processes to improve product mix by shifting to higher count yarns and adding further value through the use of modern processes. Graduates in fabric manufacturing should have a sound knowledge of electronic gadgets attached to high speed machines including CAM (Computer Aided Manufacturing) and ability to use computer-based systems to monitor and better manage the productivity and quality.

The graduates in dyeing and finishing should have a solid understanding of chemistry, fibres, machinery, colour science, and

various process variables and the latest finishes that add value to textiles. The graduates in apparel and textile designing institutes should be acquainted with the latest world fashion trends. This will help the export oriented textile industry to be more proactive in marketing its products internationally rather than being engaged in reactive marketing of its products. Graduates in garment manufacturing should be training to employ efficient methods for productivity, waste minimization and consistent quality. There is a shortage of graduates in merchandising departments. The merchandising and marketing staff should be qualified to deal in business management skills, with basic all-round knowledge of textiles, and should be able to formulate export marketing plans, in accordance with global supply and demand patterns. The textile industry of Pakistan is requires graduates with excellent knowledge of emerging man-made fibres industry and also the processes such as spinning, weaving/knitting and processing with basic knowledge of business sciences including business management, marketing and market research, and quality management.

Major issues regarding Textile Education in Pakistan

Stereotyped curriculum

Most of the textile institutes in the country have curriculum which is quite stereotyped, and often designed without any formal input from the textile industry. Most textile engineering curricula do not include emerging textile technologies, such as nonwovens, technical textiles, coatings, micro-encapsulation, plasma treatments, spraying and ink jet techniques, and nanotechnology related to textiles. In many cases, there is absence of courses related to quality management, productivity enhancement, energy conservation, cost and waste minimization and ecological and social accountability issues. Moreover, the textile engineering courses have very little 'design' component so that when it comes to innovation and new product development the graduates do not do well.

Stereotyped education process

In addition to the 'content' of the textile curriculum, the content delivery to the students is mostly by 'lecture method' with little active participation or interaction of the students in the learning process, where students are left with lots of 'information' but little 'knowledge' and real-world problem-solving skills. There is need for incorporation of 'problem-based instruction', 'discussion-based instruction' 'project-based instruction' and 'collaborative learning' in the education process. Although some universities are already doing that, but more students should be exposed, at least for one full summer semester, to real-life industrial settings through supervised internship.

Lack of modern infrastructure and facilities

With the exception of few leading universities, it is really sad that some of the institutes offering degrees in textile do not have adequate lab machinery and equipment for practical hands-on training of the students.

Notable Institutes offering Textile Education in Pakistan
Table-1: Institutes offering textile education in Pakistan

No.	University / Institute	No.	University / Institute
1	National Textile University, Faisalabad, http://www.ntu.edu.pk	12	GIFT University, Gujranwala, http://www.gift.edu.pk
2	Textile Institute of Pakistan, Karachi, http://www.tip.edu.pk	13	Allied College of Textile Management & Administration. www.actma.edu.pk
3	The University of Faisalabad, http://www.tuf.edu.pk/	14	National College of Arts, Lahore, http://www.nca.edu.pk/textile.htm
4	NED UET, http://www.neduet.edu.pk/	15	Faisalabad Institute of Textile & Fashion Design. http://www.fitfd.edu.pk/07/fitfd.html
5	Hajveri University, Lahore, http://www.hajveryuniversity.com	16	Pakistan School of Fashion Design, http://www.psfed.edu.pk/
6	Balochistan University of Information Technology & Management, http://www.buitms.edu.pk/	17	Indus Institute of Higher Education, http://www.indus.edu.pk/programa_depart.asp
7	SFDAC, Karachi, College of Textile & Polymer Engineering, http://www.ctpe.edu.pk/	18	Karachi School of Art, http://www.ksa.edu.pk/
8	BZ University College of Textile Engineering, http://www.bzu.edu.pk	19	Institute of Textile Technology & Management, Karachi. http://www.itmf.edu.pk
9	Mehran University of Engineering & Technology, Jamshoro, http://www.muett.edu.pk/	20	Punjab University, Lahore, College of Arts and Design, http://www.pu.edu.pk/
10	University of Management & Technology, Lahore, http://www.umat.edu.pk	21	University of Agriculture, Faisalabad, http://www.uaf.edu.pk
11	University of Engineering & Technology, Lahore, http://www.uet.edu.pk	22	Iqra University, Karachi, http://www.iqra.edu.pk/

Where the labs do exist, they are either outdated or under-utilized. The existing equipment, if any, mostly comprises of pilot plants of conventional textile processes, while the equipment for research and high-tech textile product development is almost non-existent.

Standard of education

Textile industrialists often complain that the existing textile programs do not commensurate with the requirement of the industry. There is a great need for an increased interaction and coordination between the industry and the institutes with an effective feedback system between the two. One of the main causes of poor standard of textile education is the absence of any system to evaluate the academic performance of the universities.

Lack of highly qualified faculty

Most of the teachers who teach textiles to undergraduate students themselves have an undergraduate degree with little, if any, practical experience of the industry. It is imperative that more teachers with Master's or PhD degrees are hired or the existing faculty is sent abroad for higher education. Unfortunately, Higher Education Commission (HEC) has totally neglected the largest industrial sector of Pakistan as far as faculty development in this sector is concerned. In order to acquire and retain competent faculty, better salary packages along with fringed benefits should be offered by the textile institutes. Furthermore, for continuous professional development of the faculty, they should have periodic exposures to textile industry, international conferences, symposia, workshops, teachers training programs, and international trade and machinery exhibitions.

Ethical values in the trained graduates

As Rev. Martin Luther King Jr. has aptly said, "Intelligence plus character - that is the goal of true education". It has been observed that many of the trained graduates of the universities lack the basic tenets of true education such as integrity, self-discipline, perseverance, sense of responsibility, respect, creativity, good judgment, vision and leadership. There is a dire need to inculcate these values in the students during their four years stay at the university for their undergraduate programs.

Lack of research culture

There is hardly any notable textile and clothing research going on in any of the Pakistani universities. One of the reasons is the lack of suitable infrastructure and other is the absence of quality postgraduate level education. The research in universities all over the world is mostly carried out by the postgraduate students under the supervision of PhD faculty. Not only there is dearth of suitable PhD faculty, who could supervise research but also there is little interest and motivation among the students to do Masters and PhD in Textiles, as there is a feeling among them that the industry either does not need or not realize the value of Textile Masters and PhDs for their industry.

Fostering better textile education

In order to make excellent textiles, the important considerations are better raw materials, better product design and manu-

facturing process, and feedback for quality assurance as well as for ideas on how to continuously improve. The same is true for textile education, or any other field for that matter. For better education, only the best and good students should be selected during admission process. Secondly, we should focus on what we teach, how we teach and who is qualified to teach it and the obtain the feedback to change our teaching methods accordingly.

We can improve the quality of student in the system by testing the applicants not only for their know-how in the basic sciences, but also for their intelligent and emotional quotient as well as by interviewing them for their aptitude for working in the textile industry. It is imperative that we continuously improve what we teach, by benchmarking with worldwide institutes, offering textile courses as well as keeping abreast of the changing requirements of the local industry. Teaching of skills such as teamwork, presentation skills, leadership, decision making, communication skills, social skills, and basic management skills etc. should also be incorporated into the curriculum.

It is not possible to have better education unless we have better teachers and a system for their continuous professional development. In this regard, it is desirable to make compulsory for the new as well as old faculty to take training courses in teaching and obtain a real-world experience in the industry. In addition, it is also important to have a system of incentives to reward collaboration, teamwork, teaching, research and publications, etc.

Just like making a quality product that perfectly satisfies the needs of the customer, education also needs an effective feedback system for its quality assurance. It is important to measure, among other things, what skills are the most used by the graduates while working in the industry, what skills were required for their success, what skills they could use to be even more effective, and what skills led to failure in a particular field of activity. It can be said that improving education is lot like building a better computer. It requires quality components: students, teacher, labs, equipment, etc.

Customer driven adjustments should be made in the curriculum to match industry needs, quality manufacturing also depends on teaching methodologies and practices and their actual application at manufacturing plants. Last, but not the least, the feedback system should be given a top priority to ensure quality education.

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