STRUCTURE OF TECHNICAL EDUCATION AND VOCATIONAL TRAINING IN PAKISTAN

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ABSTRACT

The main purpose of the study was to investigate the present profile of technical education, their problems and prospects and to find out the causes in case of slow implantation and low achievements of target. The sample of the study consisted of 40 experts of technical education, 35 principals, 175 teachers and 350 students which were selected randomly. A questionnaire was developed for principals, teachers and students of polytechnic institutes/colleges of technology. This questionnaire consisted of 59 items. An interview was also conducted with the experts of technical education about problems and suggestion regarding. The data was statically analyzed using percentages and chi-square test. The study revealed that objectives and policies were not matching. It was further found that major causes of the problems were political instability and improper monitoring, out dated curricula, inadequate budget, outdated teaching methodologies, lack of proper linkage between technical education and industry. The study recommended that a National Council for Technical Education may be activated to regulate technical education. It is recommended to strengthen the public-private partnerships. The study also recommended that national occupational skills standards, curricula and trade testing certification system may be developed.

Key words: *technical education, vocational training, Pakistan.*

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LITERATURE REVIEW

Pakistan inherited the system of public education, which had developed in the British ruled India from the 18th century. The system, which was adjusted to the social, political and industrial changes in British, had to undergo changes in the special socio-economic conditions prevailing in the sub-continent during the British rule. From the fundamental concept of identifying the responsibility of educating its subject and determining the type of education and its role, the system expanded to include the ingredients of technical and vocational education for the changing needs of post war reconstruction in 1945. From 1854 onward various committees on education reforms considered the inclusion of vocational bias in the education system. Development of education in Pakistan in later years, 1947 and onwards was influenced by the system built in the Pre-Pakistan era (Ali, 1990).

DEVELOPMENT OF TECHNICAL EDUCATION IN PAKISTAN

Like all developing countries, in Pakistan also the inputs to educational system were determined on the basis of Government's policies about education and the corresponding economic development plans. These policies and plans were framed by the respective governments in keeping their political aims and manifests of the ruling party. Unfortunately, for Pakistan, its short history was check red by rapidly changing political events which had their impacts on the socio-economic-politico environment of the country. The political events that occurred at different periods resulted in the emergence of various educational policies and initiatives so as to prepare the youth to keep abreast with the needs of the time and ensure their personal enrichment (Government of Pakistan, 1986).

Under the influence of these changes educational system also underwent adjustment and reviews so as to bring it in line with the objectives of changes. The development of technical education in Pakistan was therefore examined in this study against the background of the chain of events that occurred since 1947. The situation offered many options for a historical documentation of the changing pattern of system of education in Pakistan. For the purpose of this study the time sequence could be divided into following stages (Ali, 1998):

Stage 1:	1947 – 1958	(policy formation stage)
Stage 2:	1959 – 1970	(development period)
Stage 3:	1971 – 1977	(experimentation phase)
Stage 4:	1978 – 1988	(expansion period)
Stage 5:	1989 – 2003	(quality improvement phase)

The scope of this study is not discussing the historical perspective of technical and vocational education. The study only discusses the development of technical and vocational education across different period of time as indicated in tables below:

Table 1: Growth of Technical Education in Pakistan

Five-Year Plan	Target/Major Reform Introduced
First Five-Year Plan (1955-1960)	3 Polytechnics established.
Second Five-Year Plan (1960-1965)	5 polytechnics established.
Third Five-Year Plan (1965-1970)	Consolidation of existing polytechnics; introduction of double shift; raising enrolment to 8,000 and output of 2,500.
Fourth Five-Year Plan (1970-1975)	6 polytechnics established; education policy of massive shift towards technical education; upgrading of 7 polytechnics to Colleges of Technology offering B. Tech. degree; introduction of Matric (Tech) stream in high school which was discontinued later.
Fifth Five-Year Plan (1978-1983)	8 polytechnics established; 3 polytechnics for women set up; 7 existing polytechnics expanded and new technologies introduced in 11 polytechnics.
Sixth Five-Year Plan (1983-1988)	Consolidation of the 28 polytechnics for boys and 2 polytechnics for women.
Seventh Five-Year Plan (1988-1992)	To establish 36 additional polytechnics, mono-technics and encouraging the private sector to set up 14 private polytechnics; introduction of new technologies and increasing annual capacity from 9,000 to 19,000; establishment of the National Technical Teacher Training College (NTTTC).
Eighth Five-Year Plan (1992-1998)	Under the New Education Policy, to raise the number of polytechnics to 90 including 22 polytechnics for women and annual intake of 39,000.

Source: Ministry of Education, Islamabad; New National Education Policy and Labour Market Survey, 2003.

The above table revealed that number of polytechnics increased with passage of year. The successive governments framed substantive physical and financial targets for technical education as indicated below:

Table 2: Physical & financial targets for technical education (Mono/Polytechnic)

	1996-97	1997-98	1998-99	1999- 2000	2000-01	2001-02	Targets 2002-03	Targets 2010
Enrolment	42100	45400	48700	52100	55400	58700	62,000	87200
No of Institutions	84	94	102	110	119	127	135	294
No of Teachers	21000	22000	24000	25000	26000	27000	28000	39000

Source: National Education Policy 1998-2010.

Technical Education and Vocational Training (TEVT) Authority

Technical education and vocational training system (TEVT) was introduced in the country in 1999. This study only examined achievements, targets and overall performance of (TEVTA) in Punjab. The authority was mandated to take over the polytechnics, commercial training institutes and colleges, technical and vocational training centers, and apprentice training centers under the administrative control of the various departments or agencies. The authority

is an autonomous corporate body with a special status, composed of not less than seven and not more than fifteen members to be appointed by the Government, comprising three secretaries of the Government as ex-officio members and twelve members from the private sector. Presently, there are thirteen appointed members of the TEVTA Board, 10 of them representing the private sector and serving voluntarily on an honorary basis. The Government appoints one of the members as the Chairman who shall act as the Chief Executive Officer and is responsible for the management, administration and day-to-day affairs of the Authority. The functions of the authority were as follows (Adiviso, 2003):

1) Preparation of policy guidelines for supervision, coordination, working and smooth functioning of the institutions.
2) Acquiring, developing and administering institutions.
3) Empowering to grant consultation up to Rs. 1 million per annum.
4) Approval of development projects/schemes up to Rs. 20 million involving Government Fund.
5) Implementation of the projects/schemes.
6) Updating/revising curriculum.

The TEVTA as an autonomous organization is made up of 406 institutions as mentioned in Table 3.

Table 3: Institutions under control of TEVTA

Type of Institute	Male	Female	Total
Govt. Colleges of Technology	7	-	7
Govt. Polytechnics	13	4	17
DBA & Dip. Comm. Institutions	102	12	114
Vocational Institutes/Short Courses	8	101	109
Institutes of Lab our & Manpower Dept	42	4	46
Institutes of Punjab Small Industries Corp (PSIC)	51	6	57
Institutes of Agriculture & Barani Area Dev. (ABAD)	29	19	48
Institutes of Agriculture	7	-	7
Institutes of Cooperative Dept	1	-	1
Total	260	146	406
Percentage	64%	36%	100%

Source: Technical Education and Vocational Training Authority, 2002.

CAPACITY OF TECHNICAL EDUCATION AND VOCATIONAL TRAINING INSTITUTIONS

i. Sources of Supply

The sources of students for the courses offered by Technical Education and Vocational Training institutions are mainly those who have completed their Middle and Matric Certificates. Based on the analysis done by TEVTA, of the 3,952,000 school-aged children who entered the primary schools (Class 1) in 1990, there were only 239,000 or 6.05 percent who passed the Matric in Year 2000. This means that there are about 3,700,000 out-of-school youth or school leavers annually, which become a serious social problem of the Government

if not properly addressed. This particular segment of the population becomes the target for technical education and skill-based training, thus, the main source of intake for TEVTA programs. However, the entry qualifications, which are rigidly set at Matric, deprive the largest portion of school leavers from the benefits of training.

ii. Student Intake and Enrolment

The enrolment in government polytechnics in the province totaled 8,985 students with 1,438 dropouts in 2002. The dropout rates range from a little more than 3 percent to almost 52 percent or an average of 16.48 percent, which is a very high ratio. Overall, the enrolment is below the intake capacities of the polytechnics, which were 10,735 students in 2002. This is a sign of declining holding power of the polytechnics, which may have to be examined as to its real cause. The reasons given by school authorities for dropping out are domestic problems, wrong choice of course and employment.

On the other hand, the total intake in vocational training institutes under TEVTA in 2002 was about 12,090 trainees, including those registered with the Board of Technical Education and those enrolled in courses of more than one year.

iii. Teacher Training and Staff Development

Staff competence is major issue that the Technical Education and Vocational Training system has to address and to arrive at strategic solution. The shortage of qualified teachers is due to a lack of supply from the teacher training institution. The capacity is low and not up to standards. TEVTA has a functional unit for training under the General Manager for the academic Division. The unit is responsible for providing training to Technical Education and Vocational Training staff in pedagogy, skills upgrading and management. The staff development Institute at Gulberg, Lahore, which was originally established by the Directorate of Manpower and Training, serves as the centre for skill training for technical and vocational teachers as well as for clients from others institutions. There is a Technical Teachers Training Center (TTTC) in the province catering to the upgrading of teaching staff of polytechnics, which were assisted by TEP. This facility needs to be activated and further strengthened to fulfill its mandate.

There are initiatives pursued by individual polytechnics for the training of their staff and even for the continuing education of DAE holders who desires to pursue their basic degree and for B. Tech degree holders to do post-graduate studies through affiliations with local universities. Resources support system for technical teachers' training is operating in the province. One of them is the Department of Technology Education of the Institute of Education and Research, University of the Punjab Lahore, which aims to produce technical teachers, educational leaders in the Technical Education and Vocational Training system such as administrators, planners, technical supervisors and head teachers. The areas of specialization are as follows: Drafting, Wood work, Metal work, Electricity, Electronics, Industrial Management and computer Technology (Adiviso, 2003).

iv. Physical Facilities

The sites and campus of polytechnics cover relatively large land areas. By and large the present building for workshops, laboratories, classroom and offices are quite sufficient for the requirements of the various courses offered in the polytechnics and the technical training institutes. There are good infrastructures that were put up under previous bilateral assistance program like the German and Pakistan project of the Labor and Manpower Department for the Technical Training Institutes. The TEP has provided 17 civil work schemes in 15 project institutions to accommodate existing and new technologies. However, existing physical plants need to be rehabilitated, redesigned, repaired and maintained. Which thing cannot be done due to financial constraints of the Government? There is dire need to train and reorient the teaching staff on workshop management and facility maintenance (Adiviso, 2003).

v. Conditions and Appropriateness of Existing Equipment

The major equipment found in the workshops of polytechnics and technical training centers are generally outdated, Some of this old equipment, however, are still usable and to some extent may be utilized for teaching basic operations and processes. This state of facilities has posed problems like replacement of part and the economics of servicing and maintaining them. There are relatively new sets of equipment acquired from donors under bilateral assistance projects as mentioned earlier. There is a need to upgrade the existing equipment to keep abreast with the technological changes and to be relevant to the needs of industry.

vi. Funding of Technical Education and Vocational Training Institutions

TEVTA Fund is vested in the Authority to which all monies received are credited, such as those funds received from the Government, donations, fess and other sources. The main source of funding of TEVTA is the Government of Punjab, which comes in as grant-in-aid on a non-developmental basis. This annual fund from the Government constitutes the recurrent budget required for maintaining and operating the various institutions including the Board and the Secretariat of TEVTA.

Table 4: Annual grant of TEVTA

Financial Year	Amount (in millions)
1999-2000	Rs 945.25
2000-2001	Rs 945.25
2001-2002	Rs 945.25
2002-2003	Rs 1,034.55

Source: Technical Education and Vocational Training Authority, Punjab.

The Government is the main provider of funds for government colleges, polytechnics and training institutes. A recurring budget is provided mainly for the payment of salaries. Non-salary expenses represent a small portion of the budget to take care of utility bills and other maintenance expenses. The increase in yearly budget is due to salary increases and not for operating and maintenance expenses. The institutions are dependent to a large extent on

budgetary allocations from the Government. There is not much motivation to support initiatives for income generation or cost recovery.

The budget is a big constraint in any plan to reorient the Technical Education and Vocational Training system to be demand-driven. Any new courses to be offered in keeping with the market demands will need additional financial inputs for the procurement of equipment, enhancement of staff capability, curriculum and training standards development, consumable materials and site development for image building of Technical Education and Vocational Training institutions. There is a need to broaden the financial base of existing polytechnics and colleges through budget increases, outsourcing, resource generation, cost recovery measures and external assistance.

vii. External Efficiency of Technical Education and Vocational Training Institutions

One indicator of external efficiency of the Technical Education and Vocational Training system is the social demand of courses offered in the polytechnics. An analysis of the 2002 enrolment indicated that they failed to match the intake capacities of the polytechnics. Applications for admission in a number of courses were below the planned student intake, leaving no choice but to accept even the less qualified applicants. It can be inferred that the social demand for DAE courses had decreased due to the weak economic demand for the skills and the dismal training conditions.

viii. Pass-Outs in External Examinations

The umber and percentage of pass-outs in the external examination conducted by the PBTE can indicate the external efficiency of the Technical Education and Vocational Training system. The total number of pass-outs in Technical Education and Vocational Training courses was 10,586 or about 72 percent of the 14,721 candidates who sat for the examinations in 2002. Of this number, there were 2,910 pass-outs of the DAE program out of 6,358 candidates, which is about 46 percent.

ix. Participation of the Private Sector in Technical Education and Vocational Training

The private sector is highly committed towards making the Technical Education and Vocational Training system demand-drive. Its participation is prominently felt in various level of the Technical Education and Vocational Training system. The newly established TEVTA has nine members of the Governing Board, out of the thirteen incumbent members, representing the private sector. The 21Boards of Management (BOMs) at the district level comprise about nine members, seven of whom represent the private sector. The Lahore Chamber of Commerce and Industry (LCCI) has a committed to attend to technical and vocational training matters in addition to the active role taken by its membership in various programs of polytechnic and training institutions. The private sector is involved in the various IMCs organized under the ongoing ADB-assisted Technical Education Project. Most of all, the private sector has opened its door for the on-the-job training of trainees and has committed itself to the call of patronizing the Technical Education and Vocational Training programs by employing those who successfully completed their training or passed the skills

certification process. However, the level of participation of the private sector in the development and promotion of Technical Education and Vocational Training is not so consistent; proceeding mainly on a selective basis. By and large, the institute-industry linkage is participation in Technical Education and Vocational Training like a tax break or relief, as done in many countries (Adivisio, 2003).

OBJECTIVES OF THE STUDY

The main objectives of the study were:
1) to highlight the present profile of technical education and vocational training agency (TEVTA) in Punjab province.
2) to examine the physical targets and achievements (TEVTA).
3) to find out the causes in case of slow implementation and non-achievements of targets.
4) to recommend strategies for the improvement of technical education in Pakistan.

SAMPLE OF THE STUDY

There were 83 Institutions (Govt. Polytechnic Institutes /Govt. Colleges of Technology) including 10 Govt. Polytechnic Institutes for Women in Pakistan. Among these 35 institutes were randomly selected:

Table 5: Details of the sample institutes

Province	Male Institute	Female Institute	Total
Punjab	09	04	13
Sindh	09	03	12
Blochistan	01	01	02
NWFP	06	01	07
Federal	-	01	01
Total	**25**	**10**	**35**

Thus the total sample of the study consisted of 35 principals, 175 teachers (5 teachers per institute), 350 students (10 students per institute) and 40 technical education experts.

RESEARCH INSTRUMENTS

Questionnaire is used as tool of research as it is more efficient in that it requires less time, less expensive and permits collection of data from much large sample (Best & Kahn, 1992). It is quite suitable instrument for the collection of standardized and quantifiable information from all members of a sample. It is easy to fill out, keeps respondents on subject, is relatively objective and fairly easy to be tabulated and analyzed (Best & Kahn, 1992). A questionnaire was developed to obtain data from the principals, teachers and students. An interview was also scheduled to elicit opinion from the experts of technical education. A summary of the data analysis is given in the below tables:

DATA ANALYSIS

A summary of responses of the teachers, principals and students is given in Table 6 & 7.

Table 6: Summary of Responses

Statement	Category	SA	A	U	DA	SDA	χ2 (df =4) at 0.05
Objectives of technical education are achievable.	Principals	3	24	4	4	-	46.14
	Teachers	15	118	23	19	-	219.71
	Students	158	97	32	37	26	184.88
Workshop/laboratory is well equipped.	Principals	4	20	5	5	1	31.71
	Teachers	14	94	36	20	11	134.9
	Students	58	175	34	24	59	210.03
Teachers are professionally and academically sound.	Principals	5	11	7	8	4	n.s
	Teachers	33	58	31	41	12	31.82
	Students	123	82	33	44	68	71.46
The employment chances are sufficient for the graduates.	Principals	5	6	6	16	2	16.00
	Teachers	22	39	30	16	68	47.43
	Students	33	61	36	174	46	199.98
There is sufficient budget provision for maintenance of equipments.	Principals	3	5	3	9	15	14.85
	Teachers	15	20	46	43	51	30.46
	Students	24	62	61	179	24	232.26
Guidance and counseling facilities are available in the polytechnic institutes.	Principals	7	6	4	9	9	n.s
	Teachers	31	33	26	46	39	n.s
	Students	65	33	36	170	46	187.51
Present curriculum of technical education meets s industrial needs.	Principals	3	5	0	12	15	15.56
	Teachers	29	34	30	28	54	13.48
	Students	35	41	49	193	32	272.57
Present curricula help to develop the critical thinking among the students.	Principals	3	4	2	16	10	19.99
	Teachers	13	48	38	54	22	34.05
	Students	46	49	57	166	32	169.23

Table 7: Summary of Responses

Statement	Category	SA	A	U	DA	SDA	χ2 (df =4) at 0.05
Contents curricula achieve the course objectives.	Principals	4	2	0	12	17	22.71
	Teachers	25	23	36	46	45	13.31
	Students	37	58	62	44	149	117.34
Theory and practical work are separately completed.	Principals	2	12	7	8	6	n.s
	Teachers	15	52	41	41	26	24.05
	Students	52	145	53	50	50	100.54
Quality of the training imparted to polytechnic teacher is satisfactory.	Principals	1	10	7	12	5	10.57
	Teachers	20	10	38	60	47	46.51
	Students	40	49	44	176	41	201.34
Proper weight-age is given to student's practical work in final assessment.	Principals	2	7	10	10	6	n.s
	Teachers	56	36	45	11	27	33.77
	Students	23	169	20	77	61	209.14
Semester system of examination is useful for polytechnic education.	Principals	4	8	5	9	9	n.s
	Teachers	37	57	18	38	25	4
	Students	52	168	57	37	36	37
There is coordination with industry to reinforce learning e.g. site visits, exchange of staff.	Principals	4	4	0	12	15	15.28
	Teachers	23	30	17	56	49	32.28
	Students	54	33	66	52	145	108.43

It was revealed in Table 6 & 7 that teachers of technical and vocational institutes were not academically and professionally sound. There was no sufficient budget for maintenance of equipments. Employment opportunities were not sufficient and no guidance available at technical and vocational institutes. Curriculum did not meet industrial needs as there was no coordination between industry and institutes. Proper weight age not given to practical work and respondents favored semester system. The quality of training was not satisfactory.

INTERVIEW ANALYSIS

Below is a summary of the interview with experts of technical education.

Question1 what are problems in promotion of technical education in Pakistan?

Table 8: Summary of Answers

Problems identified	Percentage
There is no well-defined quality management system.	94
There is no legislation for industry to have proper linkage.	82
There is limited access to higher education.	71
Lack of industrial experience of teachers.	89
Lack of skill orientated curriculum.	80
No opportunity of foreign training for teachers.	70
No close liaison with industry.	54
Graduates/students of technical education are not socially recognized and accepted.	86
Non-relationship between trainers and employers.	51
Adhocisim in the Government policies.	85
Political instability, improper monitoring, lack of funds, leakage of funds.	65
Delayed allocation and improper utilization of resources.	60
Lack of research in field of technical education.	52

Question 2 What do you suggest for development of technical education in Pakistan?

Table 9: Summary of Answers

Suggestions	Percentage
There is dire need of a well-defined quality management system.	91
Effective and efficient planning, implementing and monitoring may be developed.	86
New technologies to be introduced and amalgamation of new technologies with existing technologies.	74
Practical work be related to industry.	57
Skill orientated curriculum.	91
There should be industrial based foreign training of teachers.	82
Job security for the teachers should be ensured.	71
A National Council for Technical Education be activated to regulate technical education.	63
Distance education system and continuing programs with proper link with industry be introduced in technical education.	52
Social adjustment of technologists as compared to conventional graduates.	90
Indigenous / foreign scholarships should be awarded to students.	79
Proper system for higher education must be introduced and new institutions should be established.	68
Targets/skills should be job oriented.	55
There is great to regulate technical education in collaboration with Pakistan Engineering Council.	90
There must be strong relationship between the curriculum of technical education with the world of work.	70
Need to involve all stakeholders in planning.	60
Need to have good system of manpower forecasting, planning and analyzing.	55

RESULTS & DISCUSSION

The study shows that the facilities of laboratory and computer are sufficient while building, transport, first aid, hostel, fire fighting facilities, latest reading material, on line research facilities, budget, are not sufficient in the institutions of technical education. It is revealed that the overall physical facilities were not satisfactory. The same results have been reported by Adiviso (2003). Similarly the teachers not were academically and professionally. There were no guidance and counseling services in the system as reported in the findings of Ali (1996) and Adiviso (2003).Technical is not helpful in employment and curriculum is outdated and theory oriented. The examination system is only theory oriented and does not evaluate competency of students in technical know-how. There is no link between industry and technical education. The same findings reported by Ali (1985).

As far as allocations and utilization of resources for technical education in Pakistan is concerned they are not sufficient for modernizing the system of technical education. Targets sets in the policies are realistic their process of preparation is efficient but the plans are not realistic and not based on proper research. Educational administrators and teachers are not consulted in plan preparation as found by Ali (1985) and Adiviso (2003).

There is no well-defined quality management, reward/award and legislation for industry to have proper linkage system. There is lack of industrial experience of teachers, skill orientation in curriculum and opportunity for teachers to get training from developed countries. It was recommended in the National Education policy (1998-2010) Govt. of

Pakistan (1998) as reported by Ali (1985), Sindh Board of Technical Education (1974) and Adiviso (2003).

Graduates/students of technical education are not socially recognized and accepted. The same results reported by Adiviso (2003) and Ali (1998). No indigenous / foreign scholarships for teachers and students are available. No proper system for access towards higher education. No relationship between trainers and employers. Indigenous / foreign scholarships should be awarded for teachers and students. Proper system for higher education must be introduced and new institutions should be established.

The experts of technical education identified that adhocism in the government policies, non-involvement of competent experts in the policy and planning process, political instability, improper monitoring, lack of funds, leakage of funds, delayed allocation and improper utilization of resources and lack of research oriented education in field of technical education are root causes of deterioration of technical education.

The experts suggested that there is great need to regulate technical education in collaboration with Pakistan Engineering Council. Effective and efficient planning, implementing and monitoring are also needed. There must be strong relationship between the curriculums of technical education with the world of work, involvement of all stakeholders in planning and a good system of manpower forecasting, planning and analyzing.

CONCLUSIONS

1) There is lack of effective and efficient planning, implementing and monitoring system.
2) Curriculum is out-dated and did not meet industry needs. No liaison between industry and technical institutes.
3) There is no compulsion of practical work in related industry. No proper weight age to practical work.
4) There is no focus on skill orientated curriculum.
5) There is no industrial based training and opportunities for teachers.
6) There is no social adjustment of technologists as compared to conventional graduates.
7) There is no system of indigenous / foreign scholarships for teachers and students.
8) There is dire need to regulate technical education in collaboration with Pakistan Engineering Council.
9) There is no link between the curriculums of technical education with the world of work.

RECOMMENDATIONS

The study recommended that:
1) Lack of coordination between institutions and world of work hinders job placement of technical graduates. The problem can be addressed by establishing employment centers in the institution to facilitate outgoing graduates. Foreign investment in the local industry can also boost employment opportunities.
2) The operating budget of the institutes should be fixed in relation to enrolment and the requirements of training material on a realistic basis to improve benefit cost ratio.

3) Guidance and counseling facilities are not available in the polytechnic institutes. They must be provided to identify the saleable skills in students and to guide them to the professions in which these skills would be polished and re-provided to the market.

4) Present curriculum of technical education is not at par with the industrial needs and international standards. It is not producing critical thinking skills present curriculum needed to be revised periodically and according to industrial needs.

5) Theory and practical work are separately completed, therefore, due to lack of interrelationship between both; their objectives are not achieved so their unification is voice of the present era. There should be more focus on skill orientation in the curriculum. There must be strong relationship between curriculums of technical education with the world of work. The study also recommended introducing semester system in the institutes.

6) Effective and efficient planning, implementing and monitoring are needed. There is great need to have good system of manpower forecasting, planning and analyzing.

7) There should be industrial based training and opportunities given to teachers to get training abroad.

8) A National Council for Technical Education may be activated to regulate technical education.

9) There is dire need to regulate technical education in collaboration with Pakistan Engineering Council.

10) Connect Vocational & Technical institutions with institutes of higher learning through-out Pakistan.

11) There is a need to strengthen the public-private partnerships.

12) It was also recommended to develop linkages with international vocational skill standards.

13) The study also recommended developing national occupational skills standards, curricula and trade testing certification system.

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