Final

CAUSES OF FAILURE TO IMPLEMENT TECHNICAL AND VOCATIONAL EDUCATION POLICY INTERVENTIONS AT SECONDARY EDUCATION

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PREFACE

Education is globally acknowledged as only means of transforming and empowering the citizens of the country with knowledge, skills and attitudes to enable them to become productive members of the society. It leads to economic growth, social mobility and political stability in the country because Technical and Vocational Education creates employment opportunities for the individuals. Skilful workforce plays a vital role in individual's productive capacity that is the integral part of Human Resource Development. Considering the importance of skilful workforce, National Education Policy 2009 stipulates to commission a study at secondary school level to suggest realistic recommendations to make technical and vocational education a part of general education. Furthermore, Technical and Vocational Education is a major supplier of skills as per requirements of the labour market at national as well as international level, but presently its share is negligible.

I would like to express my gratitude to all the Education Managers and teachers of Provincial/Regional Education Departments for their cooperation in providing data, other relevant information and materials. I do appreciate the services rendered by the research team members comprising to Mr. Muhammad Aslam Bhatti, Joint Director (Research), Dr. Khawaja Sabir Hussain, Deputy Director (Research) and Syeda Shaista Bano, Deputy Director (Research) and other officials who collected data from sample districts for this research study. The services of Mr. Muhammad Akram, APS and Mr. Muhammad Saddam, Research Assistant are also appreciable. The services of Mr. Zulfiqar Ali Joya, APS for composing this report are highly appreciated.

Niamatullah Khan
Director General

EXECUTIVE SUMMARY

There is a dire need of spreading the technical and vocational education in Pakistan to boost economy and to take care of un-employment. There are several options available for technical and vocational but lot of improvement is required. Moreover the available options for TVE need integration and inter-linking in various options except Punjab, where a customized training for industry is available. This study was designed to find and assess skills need and requirements of National and International Industries. The focus of the Study was to evaluate implementation of National Education Policy (2009) provisions regarding Technical and Vocational Education in Pakistan and highlight opportunities, gaps and challenges throughout the country. Whole of the educational administration of four provinces namely Sindh, Punjab, Khyber Pakhtunkhawa, Balochistan and Regions (Gilgit Baltistan and AJK) were included in the population. It was observed that Technical and Vocational Education is being implemented by different departments/institutions.

The research team collected information on structured instruments from Education Managers, Director of Technical and Vocational Education and Representatives of Chamber of Commerce and Industries. Research team also visited sample districts for data collection. Three different research instruments were developed and focus group discussions were also organized with the respondents of the Study. It was not possible to collect data from all the districts, therefore, it was decided that provincial headquarter and adjacent districts where regional offices of (NAVTEC) are functioning were included in the sample districts. The Research Team of AEPAM visited 12 sample districts and collected data. Collected data was coded, tabulated and analyzed according to the objectives of the study.

Observations and Findings of the Study

1. Majority of the respondents were of the opinion that shortage of trained teachers was one of the major causes of failure of policy interventions regarding technical and vocational education.

2. According to the respondents, technical and vocational education had advantages such as creation of employment opportunities and practical knowledge, production of required manpower for the industry, motivation and involvement of students in the industry.

3. Majority of the respondents had identified that cooperation may be extended for continuous professional development of teachers and students as per requirements of industries and curriculum should be developed and revised accordingly.

4. It was deserved that 80% willing students have access to admission in Technical and Vocational Institutions whereas 20% have no access.

5. Almost all of the respondents (99%) described that Market-Driven Courses of TVE are offered to students in Technical and Vocational Institutions.

6. The majority (80%) of the respondents suggested that industry is involved in Technical and Vocational Education whereas 20% respondents said that there is no involvement of industry in TVE in their respective districts/areas.

7. The different reasons of non-involvement of Industry in TVE suggested that 59% of respondents that there is no industry in the area while 31% respondents indicated that local industry owners are not interested in TVE.

8. Majority of the respondents were of the view that industry should be involved at the time of development of curricula while some respondents described that industry should be involved in selection of the students for employment. As regard contents of curriculum mixed views were found 45% respondents were of the view that curriculum contents are highly relevant to job market. Similarly 50% respondents were of the view that TVE curriculum should be revised through market survey or by need assessment basis.

9. Data indicates that majority of the respondents opined that lack of coordination and communication gap among stakeholders are the main constrains create gaps for developing relationship among industries and educational institution for technical and vocational education in the country.

10. It was found that 36% respondents described that the promotion of industry might be helpful to launch TVE at secondary level. While 16% respondents thought TVE promotional campaign might be launched. Similarly 94% of the respondents said that there is need for promotion of entrepreneurship to address youth unemployment. Moreover, majority of the representatives thought that Chamber of Commerce and Industries were involved in the process of development of TVE curriculum and Teacher Training process.

Conclusions

On the basis of the findings and observations of the research, the following conclusions were drawn:-

1. Shortage of trained teachers is one of the major causes of failure of policy interventions regarding technical and vocational education.

2. There is lack of Market-Driven Courses for TVE in Technical and Vocational Institutions.

3. Industry is not reasonably involved in policy formulation of technical and vocational education.

4. Majority of the Education Managers were of the opinion that TVE should not be a part of general education at secondary education level, because it is totally different from general education.

5. Revision of TVE curriculum is very critical in order to enhance employability of the graduates.

Way Forward

1. Trained Teachers should be appointed for TVE courses in educational institutions. Moreover, on going professional development of teachers must be introduced.

2. Industry may be involved in policy formulation and curriculum content selections.

3. Market-Driven Courses of TVE may be offered to students in Technical and Vocational Institutions.

4. There should be continuous revision of TVE curriculum to meet the demands of the markets.

Chapter One

INTRODUCTION

Globally education is acknowledged as only means of transforming and empowering the citizens of the country with knowledge, skills and attitudes to enable them to become productive members of the society. It leads to economic growth, social mobility and political stability in the country because this creates employment opportunities for the individuals. Skilful workforce plays a vital role in individual's productive capacity that is the integral part of Human Resource Development. Considering the importance of skilful workforce, the National Education Policy (2009) stipulates to commission a study at secondary school level to suggest realistic recommendations to make technical and vocational education as a part of the general education. Furthermore Technical and Vocational Education is a major supplier of skilled workers as per requirements of the labour market. At this particular time, the share is almost negligible.

Rapid economic growth demands a mixture of skilled workers and innovative scientists trained in the areas related to national development and need of the industries. The accelerated economic progress of the Asian countries such as China, Japan, Korea, Malaysia and also Australia are excellent examples to this effect. It is an established fact that technical Education and vocational training help the individuals to contribute towards economic growth and social development of a country by acquiring knowledge and skills (National Skill Strategy, 2008). Technical and Vocational Education (TVE) is basically the skill-development of workforce working in the industries of the country. It is also defined as marketable and economically relevant education for people. Technical Education refers to post-secondary courses of study and practical training

aimed at preparation of technicians to work in the organizations and become supervisory staff members.

One of the most important features of Technical and Vocational Education (TVE) is its orientation towards the world of work and the emphasis of the curriculum on the acquisition of employable skills. TVE delivery systems are therefore well placed to train the skilled and entrepreneurial workforce that the country needs to create wealth and emerge out of poverty. Another important characteristic of TVE is that it can be delivered at different levels of sophistication. This means that TVE institutions can respond to the different training needs of learners from different socio-economic and academic backgrounds, and prepare them for gainful employment and sustainable livelihoods. The youth, the society can, therefore, directly benefit from a TVE programs. To revitalize, modernize and harmonize the technical and vocational education in order to transform it into a mainstream activity for the youth development and human capacity building in Pakistan.

Pakistan is a developing but industrialized country that needs skilled workforce and technical and vocational education require great attention for the vocationalization of the Secondary Education. It is fact that in these days, vocational education is powerful and effective method for bridging the gap between the world of work i.e industries and educational institutions.

Recognizing the importance of the technical and vocational education various attempt has been made in different policies to involve industries for vocationalization of curricula as per their needs. The goal of improving such relevance is the most important reason such as personal development, socio-political goals and economic goals. Hence we are facing various constraints in the successful launching of TVE at secondary level. Various efforts have been made in the Pakistan including TVE subjects at secondary level of education. For instance, the agro technical subjects like industrial arts (woodwork, metal work, & electricity), agriculture, and home economics subjects were introduced but due to different barriers at various levels, the policies and programs are not implemented to achieve objectives accordingly.

According to Tirmazi, (2006), Matric Technical Stream was launched with the support of different international agencies like Japan International Cooperation Agency (JICA) and UNESCO. He further identified various obstacles that led the Matric Tech project to failure, which includes: shortage of facilities in terms of laboratory, equipments, properly trained and qualified teachers; curriculum; and lack of commitment. Different schemes and plans were made for vocational education at secondary level in Pakistan like Industrial Arts Scheme, Comprehensive Schools, and Technical Schools, etc. Considering the importance of technical and vocational education in economic development of Pakistan, the management of AEPAM decided to investigate the current status of technical and vocational education and explore the possibilities of shift from supply oriented education to demand driven disciplines/ technologies education.

1.1 Rationale of the study

There is a dire need of spreading technical and vocational education in Pakistan to boost economy and to enhance and create opportunities for employability of youth. Training and skills being imparted at present by technical and vocational institutions need to be revised according to market driven disciplines. An evaluation study is being conducted to ascertain causes of non implementation of TVE policy interventions by Academy of Educational Planning and Management.

1.2 Objectives of the study

1. To examine current status of Technical and Vocational Education (TVE) in Secondary Education level in Pakistan.

2. To explore causes of failure to implement TVE policy interventions at Secondary Education level in Pakistan.

3. To suggest realistic recommendations for improving TVE in Pakistan.

1.3 Delimitation of the study

Considering time and resources the study was delimited to the twelve of the districts from Punjab (Lahore, Multan, Faisalabad and Sialkot). Sindh (Karachi and Larkana) Baluchistan (Quetta, Ziarat) Khyber Pakhtunkhawa (Peshawar and Haripur) Muzaffarabad and Gilgit.

Chapter Two

REVIEW OF LITERATURE

A number of national and provincial bodies are involved in providing technical and vocational education in Pakistan. These include the National Vocational and Technical Training Commission (NAVTTC), established in 2005, the National Training Bureau, Provincial Technical Education and Vocational Training Authorities (TEVTAs), provincial training boards and provincial institutions. There is some overlaps between the functions of these bodies which requires clarification. Private sector involvement with TVE is limited. There are employer representatives on the governing bodies of NAVTTC, TEVTAs, Industry Advisory Groups and institutes management committees, etc.

National Education Policy (1998-2010) recommended that a third stream Matric Tech is introduced at selected secondary schools under Education Sector Reforms (ESR) package that was approved in April 2000 and launched in 2001-2002, in the different selected institutions. It was planned to introduce the scheme in 1100 selected secondary schools across the country. For the introduction of Technical Stream, Rs.1277.858 million was released to the provinces, area governments and AJK under the ESR Program. The gender and location-wise distribution of these schools are shown below in Table 1:

Table-1

Gender	Punjab	Sindh	KPK	Bal.	FATA	FANA	AJK	ICT	Total
Male	170	100	120	110	5	5	35	5	550
Female	170	100	120	110	5	5	35	5	550
total	340	200	220	220	10	10	70	10	1100

Source: R*esearch study on technical and vocational education in Pakistan at secondary level UNESCO, Islamabad (national institute of science and technical education, (2009, p.12)*

As per scheme of studies for SSC (Classes IX-X), two technical subjects were included in the Technical group. Whereas, one technical subject was included in the Science group and Humanities group as an optional subject. It was observed that Technical group was not introduced/ offered in any of the province in the country in letter and spirit. Whereas, one technical subject against Biology and Computer Science was offered in most of the secondary schools, where technical workshop/lab was established against the Agro-Tech scheme during the mid seventies in pursuance of the National Education Policy of 1972. The funds released to the provinces against the introduction of Technical stream were utilized mostly on the construction of the class rooms / 13 workshops /Labs of the schools. Subsequently, in 2006, Ministry of Education had constituted a committee to find out the progress of implementation of introduction of Technical stream in the country. Based on the findings of the Committee, it was decided in the Inter-ministerial meeting to discontinue this scheme. Accordingly, the Curriculum Wing, Ministry of Education had excluded this technical stream in the revised scheme of studies.

2.1 National Education Policy Actions (2009)

The National Education Policy (2009) proposed the following Policy Actions:

1. Inputs of all stakeholders like Industrial/Agricultural/Service sectors and Business Community etc. shall be institutionalized to ensure their inclusion in all current and future reforms of TVE to enable the sector to meet market needs.

2. Skill Standards and Curriculum should be developed and standardized at National Level.

3. The TVE curriculum shall be developed in standardized modules for each trade to eliminate differentials across various training institutions to provide opportunities to the trainees for horizontal/upward mobility and also help in assessment and certification of apprentices in non formal sectors for their entry into formal vocational/technical sectors.

4. TVE shall be extended according to the need of the area, irrespective of the level i.e. Tehsil, District and Division and should be in access of every citizen.

5. Level-wise prerequisites for entry as a teacher in TVE shall be defined and Teacher professional development shall be focused as an ongoing process. Terms and conditions of service for TVE teachers shall be compatible with Market- demand of their services and skills.

6. Local conditions and requirements must be considered while making any recommendations for replication of TVE model, implemented in other countries but modified with context of Pakistan.

7. A study to evaluate failures of vocational training intervention at school level shall be commissioned to make more realistic recommendations, including cost requirements, for making it part of general education up to Secondary School Level.

8. Curricula for vocational education shall allow flexibility for adaptation as per requirements of local market including absorption of future changes in the market under changing circumstances.

The National Vocational and Technical Education Commission (NAVTEC) have already prepared a set of strategies for this sector. These provide a basis for development of implementation plans for the technical and vocational sector. The above policy actions in conjunction with these strategies will assist in development of implementation plans. Most strategic options given by NAVTEC appear as a natural progression from the above policy actions. Some of the strategic options that have a clear link to the above policy actions are given below;

A National Qualifications Framework (NQF) shall be established along with a changed program structure that encompasses all qualifications in the country, both academic and vocational/technical. The NQF shall be competency based and provide entry points and progression routes throughout the structure of qualifications. In particular, it shall provide the possibilities of two-way cross over between the academic and the applied

streams, with clearly mapped out recognition of credit points for each competency level as specified below:-

1. The business sector, in particular, shall be included in advising on the course and program content, and in providing training positions and job opportunities for students in the applied streams. The business sector could also help teachers by giving specialized lectures and short training programs.

2. All administrative jurisdictions and stakeholders shall be involved in a consultative process to develop the NQF program. Expertise shall be sought from countries which have applied the NQF approach in recent years.

3. To address the problem of fragmented governance structure, a coordination mechanism between higher education, school education and technical, vocational education shall be developed and implemented.

4. Government shall develop a suitable framework for technical and scientific education and training with close involvement of Chambers of Commerce and Industry.

5. Teacher training in the industries during vacation period every year for improvement of technical know-how on technological changes shall be initiated.

6. Commerce stream should also be introduced under technical education and vocational training regimes.

7. A University of Technology shall be established at the national level. Curriculum should be updated on regular basis.

8. Public Private Partnerships (PPP) should be strengthened in this area.

9. A regular tracking system shall be instituted for graduates to get feedback on relevancy.

10. B-Tech technologists should also be registered by the Pakistan Engineering Council.

11. Vocational training facilities, Polytechnic institute and Colleges of Technology shall be established on need basis.

12. A culture of related research must be created for scientific assessment of the respective contexts and needs in different areas of the country.

Chapter 3

METHODOLOGY

Research team visited the sample districts for data collection. Three different Research instruments were developed and focus group discussion was also held with the concerned respondents of the Study. It was not possible to collect data from all the districts, therefore it was decided that provincial headquarters and adjacent districts where regional offices of (NAVTEC) are functioning were included as the sample districts. Detail of sample districts is given below:-

3.1 Sample Districts

S#	Province/ Region	Sample Districts	No. of Sample Districts/Regions
1.	Punjab	Lahore, Multan Faisalabad and Sialkot	04
2.	Sindh	Karachi and Larkana	02
3.	Khyber Pakhtunkhawa	Peshawar and Haripur	02
4.	Balochistan	Quetta and Ziarat	02
5.	Azad Jammu and Kashmir	Muzaffarabad	01
6.	Gilgit-Baltistan	Gilgit	01
		Total	**12**

3.2 Respondents

Technical and vocational education is being provided by different departments therefore, the research team members collected information on structured instruments from Education Manager, Director of Technical and Vocational Education and Representative of Chamber of Commerce and Industries, which were included in the sample. District-wise detail of the respondents is given below:-

3.3 District-wise detail of the Respondents

S#	District	Education Managers	Director/ Representative of TVE	Representative of Chamber of commerce
1	Lahore	32	2	3
2	Sialkot	11	2	3
3	Faisalabad	44	57	10
4	Karachi	18	8	8
5	Larkana	11	0	0
6	Multan	61	38	15
7	Peshawar	27	3	7
8	Haripur	27	20	1
9	Quetta	43	25	2
10	Ziarat	8	0	0
11	Gilgit	34	9	0
12	Muzaffarabad	52	38	16
Total		**368**	**202**	**65**

3.4 Research Instrument of study

The main research instrument for the study was questionnaire. The following three questionnaires were designed:

i) Questionnaire for District Education Managers and Heads of Secondary Schools.

ii) The Regional Director and other concerned officers of TVETA, Heads of TVET Institutions and officers of Technical Public TVE, Directorate of Education.

iii) Representative of Chambers of Commerce and Industries.

3.5 Pilot Testing of Research Instrument

Pilot testing of the instruments was carried out in Rawalpindi and Islamabad districts. In the light of feedback received as a result of pilot testing, necessary changes were incorporated in three research instruments.

3.6 Data Collection and Analysis

The Research Team of AEPAM visited 12 sample districts of four provinces, Azad Jammu and Kashmir and Gilgit-Baltistan regions to collect required data. Collected data were tabulated and analyzed within the context of objectives set for the study.

Chapter 4

DATA ANALYSIS AND INTERPRETATION

Education Managers

The Education Managers were requested to provide basic information regarding the launch of technical stream. The respondents were also asked about their specific problem they encountered while implementation of the NEP 2009. They were asked that why this scheme was not successful and why it was not implemented in the desired number of schools. They explained causes of failure of policy interventions. A multiple choices question was designed consequently, the respondents opted for more than are option, while given their opinion. The responses are presented in following tables.

4.1 Causes of Failure of Policy Intervention

The main purpose of this research was to investigate causes of failure of policy interventions regarding technical and vocational education. This was a multiple choices question, therefore, respondent's opted more than one option from the given choices. The responses of the Education Managers are presented below:

Table 4.1.1: Causes of Failure

S#	Causes of Failure	Yes		No	
		Frequency	%	Frequency	%
1	Lack of resources (Financial).	216	59	182	49
2	Non availability of laboratory/workshop in schools.	278	76	120	33
3	Shortage of trained teachers.	310	84	88	24
4	Non-availability of required infrastructure in secondary schools.	280	76	118	32
5	Insufficient funds for maintenance/repairing of equipment.	269	73	129	35
6	Lack of commitment of heads of schools in allocation of time in the timetable.	89	24	309	84
7	Only optional subject and students are not interested.	291	79	107	29
8	Social stigma, that only poor students get admission.	218	59	180	49

Table 4.1.1 shows that majority (84%) respondents were of the opinions that shortage of trained teachers was a major cause of failure of policy interventions regarding technical and vocational education in the country. Similarly, 79%, 76% and 73% respondents were of the view that other causes include that technical education was on optional subject and students did not get admission moreover, non availability of required infrastructure, such as laboratory/workshops and insufficient funds for repairing the equipment in secondary. 59% respondents also had the opinion that lack of financial and social stigma that TVE is only for poor students were also causes of failure of policy intervention in secondary schools.

4.1.2 Advantages of Technical and Vocational Education

The Managers were also requested to provide information regarding availability of Technical and Vocational Education in secondary school level. Again this was a multiple choice questions that is why they opted for many options at the same time. The responses are presented below:-

Table 4.1.2: Advantages

S#	Advantages	Yes		No	
		Frequency	%	Frequency	%
1	Students will be involved in practical activities.	279	76	119	32
2	Talented students will get jobs in industries.	212	58	186	51
3	Motivation of students to industries.	293	80	105	29
4	Employment opportunities will be enhanced due to practical knowledge.	319	87	79	21
5	Production of required manpower for the industry.	302	82	96	26
6	Students will have hands on experience to use their talents.	216	59	182	49
7	Technical and vocational education will be provided as requirements of the industries.	281	76	117	32

Table 4.1.2 indicates that 87%, 82% and 80% respondents had opinion that technical and vocational education had advantages such as employment opportunities and practical knowledge, production of required manpower for the industry and motivation and movement of students to industry respectively. 76% respondents were of the view that students would be involved in practical activities as per requirements of the industries and provision of jobs for the students.

4.1.3 Possible areas of Cooperation between TVE and Industry

The Education Managers were requested to identify possible areas of cooperation between Technical and Vocational Education and industries. Again multiple choice questions were developed and respondents opted for more than one option while identifying.

Table 4.1.3: Possible areas of Cooperation

S#	Possible Areas of Cooperation	Yes		No	
		Frequency	%	Frequency	%
1	Grants, donations, scholarship for the students	216	59	182	49
2	Organization of seminars/workshops and Career Counseling	118	32	280	76
3	Fill of gaps between formal education and industry.	265	72	133	36
4	Curriculum development as per industrial requirements.	319	87	79	21
5	Continuous professional development of teachers and students as per requirement of industries.	352	96	46	13
6	Assess the future needs of industry.	263	71	135	37
7	Joint R&D Projects in TVE institutions.	179	49	219	60
8	Use latest machinery and equipments.	185	50	213	58

Table 4.1.3 illustrates that 96% and 87% respondents had identified that cooperation should be extended for continuous professional development of teachers and students as per requirement of industries and curriculum development as per industrial needs. 72% and 71% had suggested that possible areas of cooperation might be to fill gap between

formal education and industry and assess future needs of the industries. On the basis of this study, technical education should be provided as per assessment of the industries.

4.1.4 Open ended Questions (Education Managers)

The open ended questions were asked from Education Managers to explore reasons of closing technical stream from secondary schools. Many reasons have been identified by the Managers. These responses were recorded to convert into percentage. The following six reasons were found more important than other reasons.

Table 4.1.4: Reasons of closing Technical Stream

S#	Reasons of Closing Technical stream	Yes	
		Frequency	%
1	Government was not taking interest and no proper attention was given to these steams, even curriculum was not designed properly.	196	53
2	Lack of financial resources	185	50
3	Non availability of trained teachers	184	50
4	This technical stream was introduced only in urban areas not in rural areas. Therefore it was not popular among the students	176	48
5	Theoretical education instead of practical education during teaching was observed.	210	57
6	No approved scheme of studies by the boards was included in the final matric examinations.	218	59

Table 4.1.4 indicates that there are many reasons of closing technical stream in secondary schools. These include, government was not taking interest in continuing this scheme and even curriculum was not designed. No financial resources and trained teachers were available. Moreover, this stream was only introduced in urban areas whereas it was requirement of rural areas. Similarly, no approved scheme of studies by the Board of Intermediate and Secondary Education was included in the matric examination.

The Education Managers were requested for providing their opinion regarding Technical and Vocational Education, whether it should be the part of general education? During field visit and group discussions their divided opinion were found in this regard. Some Education Managers thought that this technical stream will be only a burden on Education Managers whereas some of them also had the opinion that by providing facilities, it can be started in secondary schools.

Table 4.1.5: Part of General Education

S#	Part of General Education	Yes	
		Frequency	%
1	Yes	214	58
2	No	-	-

Table 4.1.5 shows that that only 58%, respondent had opinion that it should be the part of general education. Whereas, during the group discussions, divided opinion was found amongst the participants.

Table 4.1.6: Involved of Industries

S#	Involvement of Industries	Yes	
		Frequency	%
1	Yes	310	84
2	No	-	-

Table 4.1.6 indicates that the respondents were requested for providing information whether industry should be involved in policy formulation of technical and vocational education. Majority of the respondents had opinion that industry should be involved in planning purposes.

Table 4.1.7: Suggestions

S#	Suggestions	Yes	
		Frequency	**%**
1	Government should provide facilities to the districts.	216	59
3	To provide required infrastructure in schools	201	55
4	To provide trained teachers	196	53
5	To provide financial resources	253	69
7	Secondary education can not give such expertise to their students and provided industrial education.	194	53
8	TVE should be included as optional subject.	125	34
9	Part time technical education should be provided to children later on. It can be added in curriculum.	176	48
10	Provision of job opportunities.	185	50

Table 4.1.7 shows that the respondents were given open ended question to provide suggestions regarding launching technical and vocational education in secondary schools.

4.2 Analysis of Questionnaire for Directors/Officers of TVE

The Directors/Officers of Technical and Vocational Education had valid and reliable data of TVE in their respective Province/Regions. Therefore, they were requested to provide information regarding different aspects of TVE. The total number of the respondents was 202. Their responses of the Directors/Officers of TVE are presented in the following Tables.

4.2.1 Access for Admission

Table 4.2.1: Access to Admission

S#	Access to Admission	Yes		No	
		Frequency	%	Frequency	%
1	Access to Admission in TVE Institutions	162	80	40	20

Table 4.2.1 shows that respondents described that 80% willing students have access to get admission in Technical and Vocational Institutions whereas 20% willing students have no access to Admission in TVE Institutions. It shows that more TVE institutions are required to be established. So that all willing student have access to admissions in desired institution.

4.2.2 Preferred Vocational Courses

Table 4.2.2: Preferred Vocational Courses

S #	Preferred Vocational Courses	Responses	%
1	Electrician	52	26
2	Computer Education	85	42
3	Refrigerator and Air Condition	40	20
4	Construction	25	12

Table 4.2.2 shows the various disciplines of vocational courses that are being offered in TVE Institutions. 42% students' preferred Computer Education discipline and 26% choose Electrician courses. Whereas 20% students selected Refrigerator and Air Condition courses whereas 12% students selected Construction in vocational courses. Thus in view of the respondents, the most preferred vocational courses is computer Education.

4.2.3 Market-Driven Courses of TVE

Table 4.2.3: Market-Driven Courses of TVE

S#	Market-Driven Courses of TVE	Yes		No	
		Frequency	%	Frequency	%
1	Market-Driven Courses of TVE are offered to students	200	99	02	1

Table 4.2.3 shows that majority (99%) of the respondents described that Market-Driven Courses of TVE are offered to students in Technical and Vocational Institutions. Whereas, one percent respondents mentioned that Market-Driven Courses of TVE are not offered to concerned students.

4.2.4 Industry Involvement in TVE

Table 4.2.4: Industry Involvement in TVE

S#	Industry Involvement in TVE	Yes		No	
		Frequency	%	Frequency	%
1	Industry Involvement in TVE in your province/area	162	80	40	20

Table 4.2.4 shows that majority 80% of the respondents described that Industry is involves in Technical and Vocational Education, whereas 20% responded and that there is no involvement of industry in TVE in their respective district/area.

4.2.5 Reasons of Non-Involvement of Industry in TVE

Table 4.2.5: Reasons of Non-Involvement of Industry in TVE

S#	Reasons	Frequency	%
1	No Industry is found in the area.	120	59
2	Local Industry owners are not interested in TVE	62	31
3	Industries own problems and policies for collaboration with government	20	10

Table 4.2.5 depicts the several reasons of non-involvement of Industry in TVE 59% of respondents told that there is no industry in the area while 31% respondents described that local industry owners are not interested in TVE. 10% respondents were in of the view that industries own problems and polices for collaboration with government might be a reason of non-involvement of industry in TVE. Therefore, there is need of more industries to be established and mechanism may be developed to involve them in TVE to every possible extent.

4.2.6 Method/stage of Industry Involvement in TVE

Table 4.2.6: Method/stage of Industry Involvement in TVE

S#	Method/Stage of involvement of the industry	Yes		No	
		Frequency	%	Frequency	%
1	Identification of discipline/ courses as per their requirements	107	53	95	47
2	Participation at the time of development of curricula	181	90	21	10
3	Only internship is allowed by industry.	102	50	100	50
4	Only study tour of the students to the relevant industry.	150	74	52	26
5	Scholarship is offered by the industry	140	69	62	31

6	Selection of students for employment	150	74	52	26
7	Financial support offered TVE students	160	79	42	21
8	Provision of material for practical purposes	170	84	32	16

Table 4.2.6 shows the method/stage of involvement of industry in TVE. 90% of the respondents were of the view that industry should be involved at the time of development of curricula. 74% of the respondents thought industry should be involved only at the time of study tour for the students to the relevant industries. 69% respondents thought that scholarship should be offered by the industries. 53% respondents described that industry should be involved in identification of courses/disciplines as per their requirements. 74% respondents suggested that industries should be involved in selection of the students for employment whereas 84% respondents had opinion that industries should provide material for practical and on the job training.

4.2.7 Relevance of Curriculum Contents to Job Market

Table 4.2.7: Relevance of Curriculum Contents to Job Market

S#	Curriculum Contents	Highly relevant		Reasonably relevant		Marginally relevant		Least relevant	
		Freq	*%*	*Freq*	*%*	*Freq*	*%*	*Freq*	*%*
1	Relevance of Curriculum Contents to Job Market	90	45	68	34	35	17	9	4

Table 4.2.7 presents the relevance of curriculum contents to job market. 45% respondents thought that curriculum contents are highly relevant to job market. Whereas 34% respondents were of the view that curriculum contents are reasonably relevant to the job market, 17% respondents described that curriculum contents are marginally relevant to the job market while 4% respondents described that curriculum contents are least relevant to job market. Thus 79% respondents had view that there is relevance of Curriculum Contents to Job Market.

4.2.8 General Education and TVE

Table 4.2.8: General Education and TVE

S#	General Education	Yes		No	
		Frequency	%	Frequency	%
1	TVE should be part of general education at Secondary Education	50	25	152	75

Table 4.2.8 shows that respondents were asked whether TVE should be part of general education at secondary education. 25% respondents were of the view that TVE should be part of general education. 75% respondents thought TVE should not be part of general education at secondary level. Thus majority of the respondents thought TVE should be imparted separately; not a part of general education. This provides institution for a separate stream of technical and vocational education.

4.2.9 Status of TVE

Table 4.2.9: Status of TVE

S#	Status of TVE	Yes		No	
		Frequency	%	Frequency	%
1	TVE should not be a part of general education at Secondary Education because it is totally from general Education	160	79	42	21

Table 4.2.9 shows the status of TVE at secondary education. Majority of the respondents i.e. 79% thought TVE should not be a part of general education at secondary education because it is totally different from general education. While 21% respondents described that TVE should be part of general education at secondary education.

4.2.10 Advantages of TVE

Table 4.2.10: Advantages of TVE

S#	Advantages	Yes		No	
		Frequency	%	Frequency	%
1	Students will be involved in practical business activities for making part of general education.	170	84	32	16
2	Talented students will be appreciated and supported.	175	87	27	13
3	Motivation and movement of students to industry.	120	59	82	41
4	Employment opportunities will be enhanced	180	89	22	11
5	Production of required manpower for the industry	165	82	37	18
7	Quality of technical and vocational education will be improved.	110	54	92	46

Table 4.2.10 depicts the advantages of TVE. 89% respondents described employment opportunities would be enhanced because of TVE and 87 percent respondents thought TVE might be helpful for talented students by supporting them in any technical/ vocational field. While 82 percent respondents thought TVE is effective in production of required manpower for the industry. 84 percent respondents described that students would be involved in practical business activities through TVE.

4.2.11 Revision of TVE Curriculum

Table 4.2.11: Revision of TVE Curriculum

S#	Revision of TVE Curriculum	Yes		No	
		Frequency	%	Frequency	%
1	Revision of TVE curriculum is required in order to enhance employability of the graduates	195	97	7	3

Table 4.2.11 reflects opinion of the respondents regarding revision of TVE curriculum. 97 percent respondents pointed out that revision of TVE curriculum is very critical in order to enhance employability of the graduates. While discussing the need of TVE curriculum, 86% respondents told that TVE curricula have recently been revised by National Vocational and Technical Training Commission (NAVTTC)

4.2.12 Mode of Revision of TVE Curriculum

Table 4.2.12: Mode of Revision of TVE Curriculum

S#	Mode of Revision of Curriculum	Frequency	%
1	Market Survey/Need Assessment Method	100	50
2	CBT format for vocational trades	90	45
3	By constituting the committees of relevant TVE trade experts from Academic and industrial side	12	6

Table 4.2.12 presents different modes of revision of TVE curriculum. 50 percent respondents were of the view that TVE curriculum should be revised through market survey or by need assessment method. Whereas, 45% percent respondents thought Competency Based Training (CBT) format for vocational trades might be used to revise TVE curriculum. Hence 6 percent respondents were of the view that TVE

curriculum might be revised by constituting the committees of relevant TVE trade experts from academic and industrial fields.

4.2.13 Constraints for developing relationship between industry and TVE institutions

Table 4.2.13: Constraints of Developing Relationship between Industry and TVE institutions

S#	Constraints/ Gaps	Respondents	
		Frequency	%
1	Lack of coordination among stakeholders	97	48
2	Communication gap among industry and TVE institutions	39	19
3	Shortage of funds for research	22	11
4	Lack of interest of TVE institutions in producing market oriented manpower	6	3
5	Supply oriented courses/disciplines are offered instead of market driven disciplines	10	5
6	Lack of required qualified professional teachers	8	4
7	Industry policies inconsistent	5	2

Table 4.2.13 presents the constraints/gaps for developing relationship of industry with TVE institutions. 48 percent respondents thought that lack of coordination among stakeholders is the main constraint, while 19% respondents described that communication gap among industry and TVE institutions create gap for developing relationship. Whereas, 11% respondents told that shortage of funds might be a constraint in this regard. 4 percent respondents thought that lack of required qualified professional teachers might be a constraint for developing relationship of industry with TVE institutions. Thus data shows that lack of coordination among stakeholder is the main constraint for developing relationship of industry with TVE institutions.

4.2.14 Measures to be taken to launch TVE at Secondary Education Level

Table 4.2.14: Measures to be taken to launch TVE at Secondary Education Level

S #	Measures to be Taken	Frequency	%
1	Promotion of Industry in Country	91	45
2	TVE Promotional Campaign	32	16
3	Allocation of Sufficient Funds	27	13
4	Proper Publicity of awareness	22	11
5	Revision of Curricula according to the modern industrial requirements	30	15

Table 4.2.14 depicts different measures to be taken to launch TVE at Secondary Education. 45 percent respondents described that promotion of industry might be helpful to launch TVE at secondary level. While 16 percent respondents thought TVE promotional campaign might be launched, 15 percent respondents suggested that revision of curriculum according to the modern industrial requirements might be an important measure in this context. Thus data depicts that promotion of industry might be a major step to launch TVE at secondary level. 11% identified that there should be sufficient funding available of TVE.

4.2.15 Enhance Youth Employability

Table 4.2.15: Enhance Youth Employability

S#	Enhance Youth Employability	Frequency	%
1	Providing employability of youth in industries	65	32
2	Overseas employability of skilled youth especially in Middle East/Gulf countries	55	27
3	Curriculum revision	40	20
4	Expansion and strengthening of industrial sector	32	16
5	Marketing and promotion of TVE on print and Electronic Media	10	5

Table 4.2.15 shows the different views of the respondents to eradicate shortage of skilled manpower and enhancing youth employability. 32 percent respondents described providing jobs to youth in industries might be helpful to eradicate unemployment while 27 percent respondents thought overseas employability of skilled youth especially in Middle East/Gulf countries might be a positive step to enhance employability. Whereas 5 percent respondents were in view that marketing and promotion of TVE on print and electronic media might be helpful in youth employability.

4.2.16 Need for Promotion of Entrepreneurship

Table 4.2.16: Need for Promotion of Entrepreneurship

S#	Need for Promotion	Yes		No	
		Frequency	%	Frequency	%
1	Need for promotion of entrepreneurship to address youth unemployment	190	94	12	6

Table 4.2.16 presents the need for promotion of enter premiership to address youth unemployment. 94 percent respondents were of the view that there is need for promotion of entrepreneurship to address youth unemployment. 6% did not support the idea. We can take clue from the majorities who suggest of need for promotion of entrepreneurship.

4.2.17 Mechanism for Youth Employment

Table 4.2.17: Mechanism for Youth Employment

S #	Mechanism for Youth Employment	Frequency	%
1	On Job training /Internships at related Industries	107	53
2	Linkage with Industries	85	42
3	Motivation of students to industries for practically oriented skill development	37	18

Table 4.2.17 depicts the mechanism suggested by the respondents to address youth employment. 53 percent respondents described that on job training/internship at related industries might be helpful for youth. Whereas 42 percent respondents thought that linkages with industries might be helpful.18% respondents described that skill development would be helpful in addressing the youth employment.

4.2.18 Suggestions for Developing Coordination between TVE Institutions and Industries

Table 4.2.18: Suggestions for Developing Coordination Between TVE Institutions and Industries

S#	Suggestions for developing coordination between TVE Institutions and Industries	Frequency	%
1	Institute Management Committees may be organized	80	40
2	Liaison between TVE officers and managers of industries	55	27
3	Industry expert may be invited quite often for the lecture/seminar	37	18
4	The industries may be involved in curriculum development	30	15

Table 4.2.19 presents the suggestions given by the respondents for developing coordination between TVE institutions and industries. 40% respondents described that institute management committees may organize for developing coordination. Whereas 27% respondents thought liaison between TVE officers and mangers of industry might be helpful while 18% respondents were of the in view that an industry expert might be invited to develop a mechanism for coordination.

4.3 Analysis of Questionnaire for Chamber of Commerce/Industry

This questionnaire was designed to get information from representatives of Chamber of Commerce and Industry for the research study "Causes of Failure to Implement Technical and Vocational Education: Policy Interventions at Secondary Education". AEPAM research team has visited the offices of Chamber of Commerce and Industry for sample district of Provinces and Regions identified. The research team had requested in writing before visiting their offices to interview on a structured questionnaire. The detail of information provided by the representative of Chamber of Commerce and Industry is summarized in the following paragraphs.

The question was asked "Do you get required skilled manpower for the Industry from present TVE graduates". Majority (92%) of the responses were in "No" which shows that TVE graduates are not fully employed in the industry. Opinion was sought know the constraints of skilled workforce, which can be observed from the following table.

4.3.1 Required skills Manpower for the Industry

Table 4.3.1: Required Skills Manpower

Required skills Manpower	Yes		No	
	Frequency	%	Frequency	%
Do you get required skilled manpower for the Industry	6	8	128	92

Table 4.3.1 shows that the question was asked to know about the constraints for non-provision of skilled workforce, the responses are summarized below:-

4.3.2 Constraints/ Gaps to get skilled Manpower

Table 4.3.2: Constraints/Gaps to get skilled Manpower

S#	Constraints/ Gaps to get skilled Manpower	No	
		Frequency	%
1	Lack of coordination among stakeholders.	45	34
2	Communication gap among Industry, job market and TVE institutions.	27	20
3	Supply oriented disciplines/courses are offered instead of market driven disciplines.	18	13
4	Inconsistency of industry policy for investment on skilled workers and graduates are not produced as per requirements.	15	11
5	No technology parks or incubation centre for creating technology entrepreneurs are available.	13	10
6	A gap between theory and practical education exists.	16	12

Table 4.3.2 shows that 34% respondents thought that there is lack of coordination among stakeholders. 20% respondents were of the view that there is communication gap among concerned stakeholders (industry, job market and TVE institutions). The table depicts that 13% had replied that Supply oriented disciplines/courses are not offered. Instead market driven disciplines are thought. Whereas, 12% were of the view that there is gap between theory and practical as far as TVE is concerned.

4.3.3 Satisfaction with the skills being produced by TVE

Table 4.3.3: Satisfaction Level regarding Skills

S#	Satisfaction	Yes		No	
		Frequency	%	Frequency	%
1	Satisfaction with the skills being produced by TVE	64	48	70	52

Table 4.3.3 indicates that 52% respondents stated that are not satisfied and only 48% shared satisfaction with the skills/ Technologies being produced by the TVE institutions. This is a mixed trend and might need further research on the topic.

4.3.4 Involvement of Industry in development of TVE Curriculum and Teacher's Training Process

Table 4.3.4: Involvement of Industry in Development

Involvement of Industry in Development	Yes		No	
	Frequency	%	Frequency	%
Involvement of Industry in development of TVE Curriculum and Teacher's Training Process	38	28	96	72

The Table 4.3.4 indicates that only 28% representatives of Chamber of Commerce and Industries were involved in the process of development of TVE curriculum and Teacher Training process. The majority in this case (72%) was not involved in the development of TVE and teacher's training program. This finding suggests are important reason for non-implementation of NEP policy options for TVE.

4.3.5 Shortage of Skilled Manpower

Table 4.3.5: Shortage of Skilled Manpower

The question was about views regarding "shortage of skilled manpower can be controlled and employability of youth can be enhanced". The responses of this open-ended question are summarized in the following table.

S#	Statements compiled by open-ended question	Frequency	%
1	To create a pool of manpower from industry and Technical Vocational Education Institutions.	16	12
2	To provide the latest machinery and equipment in Technical Vocational Education Institution.	10	7
3	To enhance practical development of training for skill youth in all disciplines/ technologies.	27	20
4	Employer industries help in training of Technical Vocational Education related disciplines.	7	5
5	Practical works should be enhanced.	20	15
6	Stakeholders must be involved during policies formations.	16	12
7	Provision of technically trained faculties as per marked demand.	7	5
8	Industries to provide internship facilities and scholarship for poor and needy students as on job training.	5	4
9	No response.	26	19

The Table 4.3.5 depicts 20% respondents were of the view that practical training can enhance the skills in all discipline and technologies. Twelve percent had responded that stakeholders must be involved in policy preparation.

4.3.6 Method of Involvement of Industry

Table 4.3.6: Involvement of Industry

The question was asked to know about the "method causes where the of involvement of the industry is taken by the general education system". The responses received in close ended form are elaborated as follows:-

S#	Method of involvement of Industry	Yes	
		Frequency	%
1	Identification of trades/courses as per their requirements	53	40
2	Curriculum development	21	16
3	Internship is allowed by industry.	18	13
4	Students Study tour to relevant industry.	13	10
5	Scholarship is offered by the industry	17	13
6	Selection of students for employment	6	4
7	Practical experience	6	4

Table 4.3.6 shows that the question was regarding involvement of the industry in general education system in present various responses. 40% respondents were of the view that courses are identified as per the requirements of the industry and 16% had replied that Technical Vocational Educational Institutions involve them while developing the curriculum. 13% respondents replied that internship is allowed by the industry to the technical/ vocational students and scholarships are also offered by the industries to the deserving students. Only 4% replied that they are invited for selection of students for employment purposes.

4.3.7 Opinion for promotion of Entrepreneurship

Table 4.3.7: Opinion for Promotion

When asked about the need for promotion of entrepreneurship to address youth unemployment, the following responses were received.

Opinion for Promotion	Yes		No	
	Frequency	%	Frequency	%
Opinion for promotion of entrepreneurship to address youth unemployment	76	57	58	43

Table 4.3.7 shows that 58% of the respondents did not favour promoting of entrepreneurship for solving youth's unemployment. However, 57% were in favour of promotion of entrepreneurship to solve the problem of youth unemployment.

4.3.8 Possible Areas of Cooperation between TVE and Industry

Table 4.3.8: Possible Areas of Cooperation

S#	Possible Areas of Cooperation	Yes	
		Frequency	%
1	Industry may provide scholarships for the students	65	49
2	Organization of seminar/workshop and career counseling	23	17
3	Placements of students in industry	13	10
4	Provision of latest equipments to the students for practical purposes	12	9
5	Curriculum development as per industrial requirements	14	10
6	Industry may provide equipment for professional development of teachers and students as per requirement	7	5

Table 4.3.8 shows regarding possible areas of cooperation between Technical Vocational Education Institutions and Industry. The above table presents that 49% were of the view that industry has to provide scholarships to the students and only 9% replied that industry can facilitate providing latest equipment to the students for practical purposes. 17% respondents had replied that industry can help the TVE institutions in organizing seminars workshops and career counseling. 10% replied that they can facilitate the TVE institutions for developing curriculum as per requirement of industries and they can extend their cooperation for placement of students in the industries by providing internships.

4.3.9 Open ended Questions

Table 4.3.9: Open ended Questions

The question was asked from the respondent of Chamber of Commerce and Industries to give suggestions were how the linkages between Technical and Vocational Institutions and Industry can be enhanced. The responses are summarized below:-

S#	Statements compiled by open-ended questions	Frequency	%
1	To conduct regular workshops practicum's according to product development.	7	5
2	To collect feedback from trainees to improve the TVE	6	4
3	The training by both Public as well as Private sectors.	19	14
4	The director of all technical & vocational institution be asked to carry out rapid assignments research.	3	2
5	A comprehensive plan be finalized, followed by the Government as effective phases to achieve the objectives	18	13
6	Govt. representatives should be appointed for joint setups.	21	16
7	Regular meetings between TVE and Industries.	14	10
8	Joint setup and office to support the youth.	8	6
9	No response.	38	28

Table 4.3.9 indicates 14% of the respondents were of the view that emphasis may be given on training by both Public as well as Private sectors may be provided. It also emphasized by 16% respondents that a joint setup of government TVE institutions and industry be established to enhance the cooperation between them. 13% respondents has emphasize that a comprehensive plan be finalized by the government followed by effective phases to achieve the objectives for implementation of NEP, 2009.

Chapter 5

FINDINGS, CONCLUSIONS, AND WAY FORWARD

Three instruments of data collection were developed to collect the information from Education Managers, Directors/Officers of TVE and Representatives of Chambers of Commerce and Industry. The observations and findings are summarized as under:

5.1 Analysis of Questionnaire of Education Managers

- Data shows that 84% respondents had opinion that shortage of trained teachers was one of the major causes of failure of policy interventions to be implemented regarding technical and vocational education's improvement.

- More than 80% respondents had opinion that technical and vocational education had advantages such as provision of employment opportunities and practical knowledge, production of required manpower for the industry and motivation and involvement of students with industry.

- Majority of the respondents had identified that cooperation should be extended for continuous professional development of teachers and students as per requirements of industries. Moreover, curriculum should be developed as per industrial requirements.

- According to the respondents, there were many reasons for closing technical stream in secondary schools. These include, that government was not taking interest in continuing this scheme. They also stated that even the curriculum was not designed. No financial resources and trained teachers were allocated. Moreover, this stream was only introduced in urban areas whereas it was requirement of rural areas. Similarly no

approved scheme of studies by the Board of Intermediate and Secondary Education was included in the matric examination.

- The Education Managers were requested for providing their opinion regarding Technical and Vocational Education should be the part of general education. During field visit and group discussion the divided opinion was observed in this regards. Some Education Managers had opinion that this technical stream will only be burden on the part of regular education. Some Education Managers had opinion that by providing facilities, it can be started in secondary schools.

- Majority of the respondents had opinion that industry may be involved in policy formulation of technical and vocational education framework.

5.2 Analysis of Questionnaire for Directors/Officers of TVE

- It was found that 80% willing students have access to get admission in Technical and Vocational Institutions. Whereas, 20% willing students have no access to admission. It shows that more TVE institutions are required to be established at national level for accommodating all students who work like to join the stream of education.

- The majority (42%) students preferred "Computer Education Discipline" and 26% choice "Electrician" as a choice. Whereas, 20% students pointed out that Refrigerator and Air Condition courses was their choice. Whereas, only 12% students prefer Construction, in vocational courses. Thus, in view of the respondents, the most preferred vocational courses are Computer Education.

- Data shows that 99% of the respondents described that Market-Driven Courses of TVE are offered to students in Technical and Vocational Institutions.

- The majority (80%) of the respondents described that Industry is involved in the Technical and Vocational Education whereas 20% responded that there is no involvement of industry in TVE in their respective district/area.

- The different reasons of non-involvement of Industry in TVE are summarized as: 59% of respondents told there is no industry in the area while 31% respondents described that local industry owners are not interested in TVE.

- The respondents were asked about the of involvement of industry with TVE. 90% of the respondents were of the view that industry should be involved at the time of development of curricula while 74% respondents described that industry should be involved in selection of the students for employment. Whereas, 84% respondents had opinion that industry should provide material for practical work related to skills.

- 45% respondents thought curriculum contents are highly relevant to job market. Whereas 34% respondents were of the view that curriculum contents are reasonably relevant to the job market.

- 79% thought TVE should not be a part of general education at secondary education because it is totally different from general education. While 21% respondents described that TVE should be part of general education at secondary education level.

- Discussing the advantages of TVE, 89% respondents described employment opportunities would be enhanced because of TVE and 87% respondents thought TVE might be helpful for talented students by supporting them in any technical/ vocational field.

- Data shows that 97% respondents pointed out that revision of TVE curriculum is very critical in order to enhance employability of the graduates. This is one of the areas where government can pay more attention.

- Data shows that 50% respondents were of the view that TVE curriculum should be revised through market survey or by need assessment basis. Whereas, 45% respondents thought Competency Based Training (CBT) format for vocational trades might be used to revise TVE curriculum.

- It was found that 48% respondents were of the view that lack of coordination among stakeholders is the main constraint while 19% respondents described that communication gap between

industry and TVE institutions create gap for non cooperation. Thus data shows that lack of coordination among stakeholders is the main constraint for developing relationship between industry and TVE institutions.

- 36% respondents said that promotion of industry might be helpful to launch TVE at secondary level. While 16% respondents thought TVE promotional campaign might be launched. Thus data depicts that promotion of industry might be a major step to launch TVE at secondary level education.

- Data shows that 32% respondents described that by providing jobs to youth in industries might be helpful to eradicate unemployment 27% respondents thought overseas employability of skilled youth especially in Middle East/Gulf countries might be a positive step to enhance employability.

- Majority 94% respondents were of the view that there is need for promotion of entrepreneurship to address youth unemployment and eradication of poverty both of these are challenges for Pakistan.

- Majority 53% respondents described that on job training/internship at related industries might be helpful for youth. Whereas 42% thought linkages with industries and 18% described that skill development might be helpful in addressing the youth employment issue.

- Data shows that 40% respondents described that institute management committees may be organized for developing coordination. Whereas 27% thought liaison between TVE officers and mangers of industry might be helpful. 18% were of the view that an industry expert might be invited to develop coordination mechanism.

5.3 Analysis of Questionnaire for Representative of Chamber of Commerce/Industry

- Data shows that 34% respondents had replied that there is lack of coordination among stakeholders and 20% respondents were of the view that there is communication gap among concerned stakeholders (industry, job market and TVE institutions).

- 52% respondents stated that they are not satisfied with the skills produced by TVE and only 48% had shown their satisfaction with the skills/Technologies being introduced by the TVE institutions.

- The data shows that 28% representatives of Chamber of Commerce and Industries were involved in the process of development of TVE curriculum and Teacher Training process.

- 20% respondents were of the view that practical and manual training can enhance the skills in all disciplines and technologies.

- 40% respondents were of the view that courses are identified as per the requirements of the industry. 16% replied that Technical Vocational Educational Institutions involve them while developing the curriculum.

- 49% of the respondents were of the view that industry has to provide scholarships to the students. 9% had replied that industry can facilitate for providing latest equipment to the students for practical purposes. 17% replied that industry can help the TVE institutions in organizing seminars/workshops and career counseling activities.

- It was found that 14% respondents were of the view that emphasis may be given on training by both Public as well as Private sectors may be provided. It also emphasized by 16% respondents that a joint setup of government TVE institutions and industry may be establish to enhance the cooperation between them.

5.4 Conclusions

On the basis of the findings and observations of the research, the following conclusions are drawn:

- Shortage of trained teachers is one of the major causes of failure of policy interventions regarding technical and vocational education. This is a very important finding and provision of

trained teachers with facilitates the implementation of policy options.

- There is lack of Market-Driven Courses of TVE in Technical and Vocational Institutions. This area may also be a priority of the government.

- Industry is not reasonably involved in policy formulation of technical and vocational education. These factors can also be further strengthened for action plan to be prepared in context of policy provisions.

- Majority of the Education Managers were of the opinion that TVE should not be a part of general education at secondary education because it is totally different from general education. This must be worked upon systematically to set up separate system.

- Revision of TVE curriculum is very critical in order to enhance employability of the graduates.

5.5 Way Forward

- Trained Teachers should be appointed for TVE courses in educational institutions.

- Market-Driven Courses of TVE may be offered to students in Technical and Vocational Institutions.

- Industry should be involved in policy formulation of technical and vocational education.

- There should be separate TVE institutions fully equipped with necessary material and other infrastructure.

- There should be continuous revision of TVE curriculum to meet the demands of the markets. This is also important to cater to diversified needs of provinces and areas.

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Annexure-1

Government of Pakistan
Academy of Educational Planning and Management (AEPAM)
Ministry of Federal Education and Professional Training
Islamabad
*****

QUESTIONNAIRE FOR
CAUSES OF FAILURE TO IMPLEMENT TECHNICAL AND VOCATIONAL EDUCATION (TVE) POLICY INTERVENTIONS AT SECONDARY EDUCATION

Education Managers

Section - I

1. Name of Respondent: _____ Designation: _____
2. Province/Region _____ Gender: Male/Female
3. Official Address: _____
4. Qualification: i) Academic:_____ ii) Professional: _____
5. Experience:_____
6. Telephone No. (Office)_____ Cell No: _____
7. Email:_____

Section II

1. In pursuance of National Education Policy 1998 and ESR 2001 technical stream was started in Secondary Schools in the Province. How many secondary schools of your districts were included in this scheme?

   Total Secondary Schools included in Technical Stream ._____

2. Is Technical Stream in Secondary Schools in your district still functioning?

   (i) Yes (ii) No

3. If "No" why did this Technical Stream stop, please explain reasons
   i) _____
   ii) _____
   iii) _____

4. If "Yes" what is current status of Technical Stream. Please explain.

   i) _____
   ii) _____
   iii) _____

5. In your opinion do you think that TVE should be part of general education at Secondary Education?

   i) Yes ii) No

6. If No, please explain reasons

   i) _____
   ii) _____
   iii) _____

7. What are the causes of failure of policy interventions?

S#	**Causes of Failure**	Yes	No
1	Lack of resources (Financial).		
2	Non availability of laboratory/workshop in schools.		
3	Shortage of trained teachers.		
4	Non-availability of required infrastructure in secondary schools.		
5	Insufficient funds for maintenance/repairing of equipment.		
6	Lack of commitment of heads of schools in allocation of time in the timetable.		
7	Only optional subject and students do not want to get admission.		
8	Social stigma, that only poor students get admission.		
9	Any other please specify.		

8. If Yes, what are advantages, please tick which is appropriate in your opinion.

S#	**Advantages for making part**	Yes	No
1	Students will be involved in practical activities.		
2	Talented students will get jobs in industries.		
3	Motivation and movement of students to industry.		
4	Employment opportunities will be enhanced due to practical knowledge.		
5	Production of required manpower for the industry.		
6	Students will have hands on opportunities to use their talent.		
7	Technical and vocational education will be provided as requirements of the industries.		
8	Gaps between general education and industry can be minimized.		
9	Any other, please specify.		

9. In your opinion industry should be involved in TVE?

   i) Yes ii) No

10. If No, please explain reasons.

   i) _____
   ii) _____
   iii) _____

11. If Yes, what are possible areas of cooperation between TVE and Industry?

S#	**Possible Areas of Cooperation**	**Yes**	**No**
1	Grants, donations, scholarship for the students		
2	Organization of seminar/workshop and career counseling		
3	Placements of students in industry		
4	Provision of latest equipments.		
5	Fill of gaps between formal education and industry.		
6	Curriculum development as per industrial requirements		

7	Continuous professional development of teachers and students as per requirement of industries		
8.	Assess the future needs of industry.		
9	Joint R&D Projects in TVE institutions.		
10	Put hands on latest machinery and equipments.		
11	Any other please specify		

12. What are your suggestions for including Technical Stream in general secondary education and industry?

i) _____
ii) _____
iii) _____

Annexure-II

Government of Pakistan
Academy of Educational Planning and Management (AEPAM)
Ministry of Federal Education and Professional Training
Islamabad
*****

QUESTIONNAIRE FOR
CAUSES OF FAILURE TO IMPLEMENT TECHNICAL AND VOCATIONAL EDUCATION (TVE) POLICY INTERVENTIONS AT SECONDARY EDUCATION

Directors/Officers of TVE

Section I

1. Name of Respondent: _____ Designation: _____
2. Province/Region _____ Gender: Male/Female
3. Official Address:_____
   _____
4. Qualification:
   i) Academic: _____ ii) Professional:_____
5. Experience: _____
6. Telephone No. (Office)_____ Cell No: _____
7. Email: _____

Section II

1. How many Technical and Vocational Secondary Schools are functioning under your supervision?

   Total TVE School: ☐

2. In your opinion do you think all willing students have access to get admission in Technical and Vocational Education?

   i) Yes ii) No

3. If Yes, which discipline vocational courses are being offered. Please write in order of priority or provide list of those courses

   i) _____
   ii) _____
   iii) _____

4. Do you think market driven disciplines of technical and vocational education offer to the students?

   i) Yes ii) No

5. If No, please explain reasons for not access to admission.

   i) _____
   ii) _____
   iii) _____

6. In your opinion, is industry involved in Technical and Vocational Education in your Province/Area?

   i) Yes ii) No

7. If No, please explain reasons of non involvement of industry.

   i) _____
   ii) _____
   iii) _____

8. If Yes, please explain the method/stage when the involvement of the industry is engaged by the general education system.

S#	Method/Stage of involvement of the industry	Yes	No
1	Identification of discipline/courses as per their requirements		
2	At the time of development of curricula		
3	Only internship is allowed by industry.		
4	Only study tour of the students to the relevant industry.		
5	Scholarship is offered by the industry		
6	Selection of students for employment		
7	Financial support to offering TVE students		
8	Provision of material for practical purposes		
9	Any other way (s), Please Specify:		

9. To what extent the curriculum contents are related to the requirements of the job market?

   i) Highly relevant ii) Reasonably relevant
   iii) Marginally relevant iv) Least relevant

10. In your opinion do you think that TVE should be part of general education at Secondary Education?

    i) Yes ii) No

11. If No, please explain reasons for not making part of general education.

    i) _____
    ii) _____
    iii) _____

12. If Yes, what are advantages (please tick which is appropriate in your opinion).

S#	advantages	Yes	No
1	Students will be involved in practical business activities for making part of general education.		
2	Talented students will be appreciated and supported.		
3	Motivation and movement of students to industry.		
4	Employment opportunities will be enhanced		
5	Production of required manpower for the industry		
7	Quality of technical and vocational education will be improved.		
8	Any other please specify		

13. Do you think that revision of curriculum of TVE is required in order to enhance employability of the graduate?

    i) Yes ii) No

14. If no, please explain reason:

    i) _____
    ii) _____
    iii) _____

15. If Yes, please suggest mode of revision of curriculum of TVE.

    i) _____
    ii) _____
    iii) _____

16. In your opinion, what are constraints/gaps for developing relationship with industry and TVE institutions?

S#	Constraints/ Gaps	Yes	No
1	Lack of coordination among stakeholders		
2	Communication gap among (industry and TVE institution)		
3	Shortage of funds to conduct research		
4	Lack of interest of TVE institutions in producing market oriented manpower		
5	Supply oriented courses/disciplines are offered instead of market driven disciplines		
6	Lack of required professionally qualified teachers		
7	Industry policies in consistency		
8	Any other please specify		

17. In your opinion what steps/measures should be taken to launch the TVE at Secondary Education?

i) _____
ii) _____
iii) _____

18. In your opinion, how shortage of skilled manpower can be eradicated and employability of youth can be enhanced.

i) _____
ii) _____
iii) _____

19. Do you think there is need for promotion of entrepreneurship to address youth unemployment?

i) Yes ii) No

20. If Yes, please suggest mechanism to address youth employment.

i) _____
ii) _____
iii) _____

21. What are possible areas of cooperation between TVE and Industry?

S#	Possible Areas of Cooperation	High	Marginal	Reasonable	Least	Not at all
1	Grants, scholarships for students					
2	Organization of seminar/workshop and career counseling					
3	Placement of students in Industry					
4	Provision of latest equipments.					
5	Consultancy services					
6	Curriculum development as per industrial requirements					
7	Continuous professional development of teachers and students as per requirement of Industries					

8.	Financial management/assistance for launching joint ventures projects					
9	Joint R&D Projects in TVE institutions.					
10	Any other please specify					

22. What are your suggestions for developing coordination between TVE Institutions and Industry?

    i) _____
    ii) _____
    iii) _____

23. Following are the policy actions of National Education Policy (2009). Please response against each action given below:

POLICY ACTIONS PROPOSED INTERVENTION (NEP 2009)

S#	Policy Actions/Proposed Intervention	Fully Implemented	Partially Implemented	Cause of not Implemented
1	Inputs of all stakeholders like Industrial/Agricultural/Service sectors etc. shall be institutionalized to ensure their inclusion in all current and future reforms of TVE to enable the sector to meet market needs.			
If implemented, please explain method of institutionalized: _____				
2	Skills Standards and Curriculum should be developed and standardized at the national level.			
Please explain method of curriculum development: _____				
3	The TVE curriculum shall be developed in standardized modules for each trade to eliminate differentials across various training institutions to provide opportunities to the trainees for horizontal/vertical mobility and also help in assessment and certification of apprentices in non-formal sectors for their entry into formal vocational/technical sectors.			
How did you implement this provision: _____				
4	TVE shall be extended according to the need of the area i.e. Tehsil, District and Division.			
How needs assessment were made: _____				
5	Skills-based vocational training courses, relevant to the local labour market, shall be offered to the graduates of literacy programs by the National Education Foundation, provincial/ area literacy department/ directorate and relevant NGOs.			
How this was done: _____				
6	Level-wise prerequisites for entry as a teacher in TVE shall be defined and Teacher professional development shall be focused as an ongoing process.			
What criteria adopted _____				

6	Terms and conditions of service for TVE teachers shall be compatible with market demand of their services and skills.			
Method, or service rules: _____				
7	Local conditions and requirements must be considered while making any recommendation for replication of TVE models, implemented in other countries.			
Which model adopted: _____				
8	Technical and vocational education institutions shall particularly focus on agro-based vocational skills to deal with both agriculture and livestock.			
Please explain: _____				
9	Curricula for vocational education shall allow flexibility for adaptation in accordance with the requirements of local market, including absorption of future changes in the market.			
Is any market survey was made?: _____				
10	Technical education institutions before offering (if planning to offer) degree programs, shall also seek clearance from Pakistan Engineering Council before launching such programs.			
Any linkages with the (EC): _____				
11	Governments shall take practical measures to remove social taboos attached to TVE and promote dignity of work in line with teachings of Islam.			
Any campaign was launched: _____				

Annexure-III

Government of Pakistan
Academy of Educational Planning and Management (AEPAM)
Ministry of Federal Education and Professional Training
Islamabad
*****

QUESTIONNAIRE FOR
CAUSES OF FAILURE TO IMPLEMENT TECHNICAL AND VOCATIONAL EDUCATION (TVE) POLICY INTERVENTIONS AT SECONDARY EDUCATION

Interview of Representative of Chamber of Commerce/Industry

1. Name of Respondent:_____ Designation_____

2. Official Address:_____District_____

3. Do you get required skilled manpower for the Industry from present TVE graduates?

   i) Yes ii) No

4. If No, then what are the constraints in your opinion for non availability of skilled workforce?

S#	Constraints/ Gaps to get skilled Manpower	Yes	No
1	Lack of coordination among stakeholders		
2	Communication gap among concerned stakeholders (industry, job market and TVE institutions)		
3	Supply oriented disciplines/courses are offered instead of market driven disciplines		
4	Inconsistency of industry policy to investment on skilled workers and graduates are not produced as per requirements		
5	No technology parks or incubation centre for creating technology entrepreneurs		
6	Gaps between theory and practical education.		
7	Any other, please specify		

5. If Yes, are you satisfied with the skills/technology which are being produced by Technical and Vocational Education?

   i) Yes ii) No

6. If Yes, do not get required skilled worker then how industrial demand is fulfilled, please explain.

7. Is Industry involved in development of Technical and Vocational curriculum and teacher's Training?
   i) Yes ii) No

8. If No, what are the reasons, please explain.
   i) _____
   ii) _____
   iii) _____

9. How shortage of skilled manpower can be controlled and employability of youth can be enhanced.
   i) _____
   ii) _____
   iii) _____

10. If Yes, please explain the method/stage where the of involvement of the industry is taken by the general education system.

S#	Method/Stage of involvement of the industry	Yes	No
1	Identification of trades/courses as per their requirements		
2	Curriculum development		
3	Internship is allowed by industry.		
4	Study tour of the students to the relevant industry.		
5	Scholarship is offered by the industry		
6	Selection of students for employment		
7	Practical purposes on the equipment		
8	Any other way (s), Please Specify:		

11. Do you think there is need for promotion of entrepreneurship to address youth unemployment?

    i) Yes ii) No

12. If Yes, please suggests mechanism how entrepreneurship can be promoted to address youth unemployment.

    i) _____
    ii) _____
    iii) _____

13. In your opinion what are possible areas of cooperation between TVE and Industry?

S#	Possible Areas of Cooperation	High	Marginal	Reasonable	Least	Not at all
1	Industry may provide scholarship for the students					
2	Organization of					

	seminar/workshop and career counseling					
3	Placements of students in industry					
4	Provision of latest equipments to the students for practical purposes					
5	Curriculum development as per industrial requirements					
6	Industry may provided practical in the equipment for professional development of teachers and students as per requirement of industries					
7	`Any other please specify					

14. Please give suggestions for improving linkages between Technical and Vocational Institutions and Industry.

    i) _____
    ii) _____
    iii) _____