6.1 STATUS OF ORGANIZATIONAL EFFECTIVENESS OF SELECTED POLYTECHNICS IN THE 4 STATES OF NORTHERN INDIA, NAMELY PUNJAB, HARYANA, HIMACHAL PARDESH AND CHANDIGARH.

On the basis of outcome of data (summarized in table 6.1) regarding the perception of stake holders of polytechnics, about the organizational effectiveness of polytechnics, following conclusions have been drawn:

6.1.1 Organizational Effectiveness of Polytechnics in Each State

In **Punjab**, Mehar Chand (MC) Polytechnic, Jalandhar have significantly higher mean score in 5 out of 6 key factors. M.C. Polytechnic is a privately managed, Government aided polytechnic and has effective (comparatively) institutional administration, institutional climate, resource utilization, staff development and student personnel administration. The polytechnic management enjoys better autonomy as compared to Government run Polytechnics.

In **Haryana**, Vaish Technical Institute (VTI), Rohtak have significantly high mean score in all the 6 key factors. This is a privately managed, Government aided polytechnic and management enjoys better autonomy and freedom in taking decisions as compared to other Government run Polytechnics.

In **H.P.**, Government Polytechnic Sundarnagar have higher mean scores in 4 out of 6 key factors. H.P. does not have privately managed-Government-aided polytechnics and therefore, study sample constitutes two Government polytechnics, one co-ed and other women. There is no significant difference between the perception of stake holders of these two Government polytechnics.
In Chandigarh, Central Polytechnic Chandigarh (CPC) have higher mean score in 5 out of 6 key factors, Chandigarh does not have aided polytechnics and, therefore study sample constitutes both the Government Polytechnics. CPC is co-ed and the other is women polytechnic.

Table 6.1 Summary of results based on data-analysis.

<table>
<thead>
<tr>
<th>Sr No</th>
<th>Key factor</th>
<th>States</th>
<th>Stake-holders</th>
<th>Polytechnics</th>
<th>Co-ed / Women</th>
<th>Govt / Aided</th>
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<td></td>
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<td>HI LO</td>
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<tr>
<td>1.</td>
<td>Instructional Pb</td>
<td>Pb</td>
<td>Hya</td>
<td>T</td>
<td>Asr</td>
<td>GPW</td>
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<td></td>
<td>process</td>
<td>(3.23)</td>
<td>(2.9)</td>
<td>(3.28)</td>
<td>(3.37)</td>
<td>UMB (2.61)</td>
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<tr>
<td>2.</td>
<td>Resource Utilization</td>
<td>HP Chd</td>
<td>T</td>
<td>E</td>
<td>SU</td>
<td>GPW</td>
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<td>(3.4)</td>
<td>(2.86)</td>
<td>(3.26)</td>
<td>(3.66)</td>
<td>UMB (2.36)</td>
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<td>3.</td>
<td>Staff devp. and Deploy</td>
<td>HP Chd</td>
<td>T</td>
<td>E</td>
<td>SU</td>
<td>GPW</td>
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<td>(3.12)</td>
<td>(2.60)</td>
<td>(3.01)</td>
<td>(3.22)</td>
<td>Chd (2.49)</td>
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<td>4.</td>
<td>Student Personnel Admin</td>
<td>HP Chd</td>
<td>T</td>
<td>S</td>
<td>GPW</td>
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<td></td>
<td></td>
<td>(3.31)</td>
<td>(2.67)</td>
<td>(3.57)</td>
<td>Jal. (3.55)</td>
<td>UMB (2.34)</td>
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<td>(2.79)</td>
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<tr>
<td>5.</td>
<td>Institutional Admin</td>
<td>HP Chd</td>
<td>T</td>
<td>E</td>
<td>MCP</td>
<td>GPW</td>
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<td></td>
<td></td>
<td>(2.95)</td>
<td>(2.53)</td>
<td>(3.10)</td>
<td>Jal. (3.26)</td>
<td>UMB (2.10)</td>
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<td>(2.09)</td>
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<tr>
<td>6.</td>
<td>Institutional Climate</td>
<td>Pb Chd</td>
<td>T</td>
<td>E</td>
<td>MCP</td>
<td>GP</td>
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<td></td>
<td></td>
<td>(3.56)</td>
<td>(2.86)</td>
<td>(3.61)</td>
<td>Jal. (3.85)</td>
<td>UMB (2.51)</td>
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Note: The values in parenthesis indicate the mean values pertaining to the constituent.
Legends

Pb. : Punjab  T : Teachers  Asr : Amritsar
Hya : Haryana  S : Student  Su : Sundarnagar
HP : Himachal  E : Employer  GPW UMB : G P for Women , Ambala
Chd : Chandigarh  A : Aided  GP Chd. : GP for Women, Chandigarh
HI : Highest  G : Govt.  MCP Jal : MCP, Jalandhar
LO : Lowest  C : Co-ed.  W : Women

It is therefore, evident from the above observations that aided institutes stakeholders perceive the effectiveness of polytechnics higher than that of Government Polytechnics.

6.1.2 Perception of Stake-Holders in Each State:

Comparison of perceptions of all the teachers, students and employers of Punjab, Haryana, H.P and Chandigarh Polytechnics respectively, reveals that the teachers of Punjab Polytechnics have significantly higher mean score of their perception about effectiveness of five key factors, excluding instructional process which has been perceived higher by the students. This is in accordance with the results obtained in inter-stake holder comparison described under section 6.1.3.

In Punjab polytechnics the employers perceived significantly lower effectiveness on five key factors, remaining one i.e. student personnel administration has been perceived lowest by the students. Students have shown their disagreement with the effectiveness of guidance, counseling and training arrangements. The perception of employers is in agreement to the results of inter-stake holder comparison described under 6.1.3. The employers of Punjab Polytechnics attribute the inadequacies in capabilities of pass-outs to the instructional process by perceiving this factor lowest amongst all the factors. They also strongly feel that participative
management, leadership qualities of the Principal, and effective industry-institute linkages need to be improved for overall effectiveness of polytechnics.

In **Haryana** Polytechnics, teachers have significantly higher mean score of their perception about effectiveness of all the six key factors. The employers have perceived the effectiveness of polytechnics lowest on all key factors except on student personnel administration, which has been scored lowest by the students. Students mostly have disagreement with the reliability of the system for awarding sessionals. The employers were critical about instructional process and institutional climate for which their mean scores were lowest.

In **H.P.** Polytechnics, students have significantly higher mean score of their perception about effectiveness of five key factors, remaining one i.e. resource utilization, has been scored highest by the teachers. Teachers considered space, building, furniture and maintenance as per the requirement whereas students have not agreed to it. The employers scored lowest on all the six key factors. They were critical of effectiveness of components e.g. institutional administration and institutional climate of polytechnics.

In **Chandigarh** Polytechnics, teachers have significantly higher mean score of their perception about effectiveness of all the six key factors. The employers have perceived the effectiveness of Chandigarh Polytechnics lowest on all but one key factor i.e. student personnel administration, which was also scored lowest by students. Employers disagree with the effectiveness of industrial exposure to staff and students, innovations in teaching and consultancy work by the staff-members.

### 6.1.3 Inter-Stake Holders Comparison:

Comparison of perception of teachers, students and employers of all the selected polytechnics in four states of northern India reveals that the teachers have significantly higher mean score in all the six key factors of organizational effectiveness in comparison to students and employers. Teachers generally feel satisfied with the curriculum and its implementation process, primarily because of lack of their exposure to world of work and absence of vision about future technical
manpower needs due to invasion of modern technologies. Many teachers, specially the freshly appointed ones, lack in pedagogical aspects of teaching – learning process. For example, many teachers considered teacher centered activities in the class as effective method of teaching under the circumstances and were satisfied with the sessional awarding system whereas students and employers perceived various factors less effective e.g. inappropriate teaching method, inadequate use of multimedia, in competency of teachers to teach certain technical subjects, lack of freedom to take-up various developmental activities, and inadequate opportunities for industrial training.

Students generally have perceived various factors satisfactory because they find that whatever teachers are teaching in the class rooms helps them in passing the examinations and earn the diploma certificate. These students are not aware of the competencies in which they should have excelled. Their perception about institutional administration and institutional climate has wide variations, not because situation is so different in polytechnic, but due to absence of their involvement in institutional administration and rapport with their teachers.

Employers on the other hand have perceived significantly lower effectiveness on five key factors, leaving student personnel administration which has been perceived lowest by students. Employers are the ultimate users of polytechnic products and services and perceive that polytechnic management has to come-up to their expectations in order to produce right kind of technical man-power. They perceive that due to lower effectiveness of instructional process, poor resource utilization, inadequate staff development and deployment, bureaucratic institutional administration and non-conducive climate, the pass-outs are not able to acquire the desired supervisory and managerial qualities. Employers suggest that pass-out technicians should possess problem solving abilities, lateral thinking, communication abilities and perseverance.
6.1.4. Inter-State Comparison of Perception of Polytechnics:

The polytechnics of Punjab have perceived organizational effectiveness higher on two key factors namely instructional process and institutional climate. Punjab has recently revised their curriculum of diploma courses in Electrical, Mechanical, Civil and Electronics engineering and this may be the reason for stakeholders showing agreement with the effectiveness of the curriculum. Punjab polytechnics have rated institutional climate high, specially in respect of belongingness, conducive work culture and accountability.

The H.P. Polytechnics have perceived organizational effectiveness higher in respect of four key factors namely resource utilization, staff development and deployment, student personnel administration and institutional administration. Both the H.P. Polytechnics are covered under World Bank assisted project for development of technician education and hence have added adequate infrastructure, staff development facilities and industry-institute interaction. G.P Sundarnagar have implemented multi-point entry and credit system and have been using a dependable sessional awarding system based on students performance. Higher effectiveness of HP polytechnics amongst the four states considered for the study may be attributed to the fact that HP being a smaller state have more effective coordination between the directorate officials and the polytechnics.

6.1.5. Comparison of Perceptions of Government and Aided Polytechnics

The students of aided polytechnics have perceived organizational effectiveness higher on account of four key factors namely instructional process, resource utilization, institutional administration and institutional climate. Students of aided polytechnics enjoy more freedom and looked after by the polytechnic management and teachers better as compared to their counterparts are in Government Polytechnics. They perceived effectiveness higher due to better resource utilization and availability of required infrastructure. Teachers of Government Polytechnics and employers of aided polytechnics perceived student personnel administration and staff development and deployment most effective respectively.
Teachers of Government polytechnics find it comparatively comfortable in respect of their teaching load in comparison with the teachers of aided polytechnics.

The employers of Government Polytechnics perceived lowest effectiveness of four factors namely instructional process, staff development and deployment, institutional administration and institutional climate. These employers were critical of interaction of polytechnics with industries, industrial exposure of staff and students and teaching methodology. The students of Government Polytechnics and employers of aided polytechnics perceived lowest effectiveness of student personnel administration and resource utilization respectively. Students of Government Polytechnics did not strongly agree with the prevailing system of awarding sessionals in their polytechnics. This was a mixed trend and so no justification could be given with the available data. The employers felt more comfortable with the initiative of aided polytechnic teachers in arranging visits and training of students and teachers.

It may be concluded that aided polytechnics are more effective as they enjoy higher degree of freedom and have flexible rules and regulation as compared to Government Polytechnics, which is evident by highest mean scores of aided polytechnics for institutional administration (M=3.32) and institutional climate (M=3.78). Although Government Polytechnics have better budgetary allocations as compared to aided polytechnics, the stake holders of aided polytechnics have perceived resource utilization most effective (M=3.37) because of their using such resources optimally.


The teachers of co-ed. Polytechnics have perceived Organizational Effectiveness higher on account of four key factors namely instructional processes, student personnel administration, institutional administration and institutional climate. Teachers of women polytechnics have perceived higher effectiveness of staff
development and deployment and resource utilization. The employers of co-ed. Polytechnics perceived lowest effectiveness of four key factors namely instructional process, resource utilization, staff development and deployment and student personnel administration, whereas employers of women polytechnics perceived lowest effectiveness of institutional administration and institutional climate.

It may be concluded that employers have perceived lowest effectiveness of four key factors in co-ed. Polytechnics and two factors in women polytechnics, because they find the pass-out diploma technicians belw their expectations. They attribute this descrepency towards short-comings in curriculum implementation, absence of initiative for development, rigid rules and regulations, inadequate infrastructure and weak industry-institute linkages in both the types of polytechnics. The co-ed polytechnics have been perceived more effective than women polytechnics because the co-ed polytechnics mainly offer engineering courses whereas women polytechnics offer few engineering courses and more non-engineering courses. Engineering courses are recent addition in many women polytechnics and therefore, lack appropriate infrastructure and teaching staff for proper curriculum implementation. The women polytechnics also face it difficulty in placement of their staff and students for industrial training due to boarding and lodging problems associated with women in industrial set-up.

6.2. TESTING OF HYPOTHESES

The hypotheses (1) has been further broken into following four sub-hypotheses and tested separately:

6.2.1. HYPOTHESIS 1.1

"There is no significant difference between the perceptions of stake holders i.e. teachers, students, and employers within the polytechnics of Punjab, Haryana, H.P. and Chandigarh respectively (Inter-polytechnic comparison in each state) about the organizational effectiveness (OE)".

The hypothesis has been tested for each state separately as follows:
Punjab  There is significant difference (ref table 5.27) at 0.05 level between the perceptions of four identified polytechnics namely, G P, Amritsar, GPW, Jalandhar, MCP, Jalandhar and GP, Hoshiarpur and hence hypothesis 1.1 stands rejected for Punjab.

Haryana  There is significant difference (ref table 5.29) at 0.05 level between the perceptions of five identified polytechnics namely GP Ambala, GPW, Ambala, GP Nilokheri, GP Hoshiarpur, GIET Hisar and VTI Rohtak and hence hypothesis 1.1 stands rejected for Haryana.

H.P.  There is significant difference (ref table 5.31) between the perceptions of two identified polytechnics namely GP Sundarnagar and GPW Kandaghat in respect of two out of six key factors and hence hypothesis 1.1 stands partially rejected for HP.

Chandigarh  There is significant difference (ref table 5.33) at 0.05 level between the perceptions of two identified polytechnics of Chandigarh namely Central Polytechnic Chandigarh and GPW Chandigarh in respect of one out of six key factors and hence hypothesis 1.1 stands partially rejected for UT of Chandigarh.

Hence hypothesis 1.1 stands rejected for Punjab and Haryana and partially rejected for HP and Chandigarh.

6.2.2. HYPOTHESIS 1.2

"There is no significant difference with - in the perceptions of teachers, students and employers of polytechnics of four selected states namely Punjab, Haryana, H.P. and Chandigarh, (Inter stake-holder comparison) about the O.E."

There is significant difference (ref table 5.45) at 0.05 level between the perceptions of teachers, students and employers of identified polytechnics of the four selected states. Thus hypothesis 1.2 stands rejected.
6.2.3. HYPOTHESIS 1.3

"There is no significant difference between the perceptions of polytechnics with the four selected states namely Punjab, Haryana, H.P. and Chandigarh (Intra-state comparison) about the "Organizational Effectiveness"

The hypothesis has been tested for each state separately as follows:

**Punjab:** The F-values were found significant (ref table 5.35) at 0.05 level for all the six key factors indicating that there is significant difference between the perceptions of teachers, students and employers of polytechnics of Punjab. Thus hypothesis 1.3 stands rejected for the state of Punjab.

**Haryana** The F-values were found significant (ref table 5.37) at 0.05 level for five out of six key factors indicating that there is significant difference between the perceptions of teachers, students and employers of polytechnics of Haryana in respect of 5 key factors of O.E. Thus hypothesis 1.3 stands partially rejected for the state of Haryana.

**HP** The F-values were found significant (ref table 5.39) at 0.05 level for all the six key factors indicating that there exists significant differences between the perceptions of teachers, students and employers of HP Polytechnics. Thus hypothesis 1.3 stands rejected for the state of HP.

**Chandigarh** The F-values were found significant (ref table 5.41) at 0.05 level for all the six key factors indicating that there exists significant differences between the perceptions of polytechnics among teachers, students and employers of Chandigarh. Thus hypothesis 1.3 stands rejected for U.T. of Chandigarh.

**Hence, hypothesis 1.3 stands rejected for the states of Punjab, HP and Chandigarh and partially rejected for the state of Haryana.**
6.2.4. HYPOTHESIS 1.4

“There is no significant difference between the perceptions of teachers, students and employers about each of the six key factors of organizational effectiveness of polytechnics amongst the four selected states of northern region namely Punjab, Haryana, HP and Chandigarh. (Inter-state comparison)”

The F-values were found significant (ref table 5.43) at 0.01 level for all the six key factors indicating that there exists significant differences between the perceptions of polytechnics amongst the four states of Punjab, Haryana HP and Chandigarh. Thus, hypothesis 1.4 stands rejected.

6.2.5. HYPOTHESIS 2.0

“There is no significant difference between the perceptions of teachers, students and employers about each of the six key factors of organizational effectiveness of Government and aided polytechnics in four selected states of northern region namely Punjab, Haryana, HP and Chandigarh”.

The F-values were found significant (ref. Table 5.47) at 0.05 level for all the six key factors of organizational effectiveness indicating that there exists significant difference between the perceptions of stake holders of Government and aided polytechnics of the states of Punjab, Haryana, HP and Chandigarh.

Thus hypothesis 2 stands rejected.

6.2.6. HYPOTHESIS 3.0

“There is no significant difference between the perceptions of teachers, students and employers about each of the six key factors of organizational effectiveness of co-ed and women polytechnics in four states of northern region namely Punjab, Haryana, HP and Chandigarh.”

The F-values were found significant (ref table 5.49) at 0.05 level for all the six key factors of organizational effectiveness indicating that there exists significant difference between the perceptions of stake holders of co-ed and women polytechnics in the states of Punjab, Haryana, HP and Chandigarh.

Thus hypothesis 3.0 stands rejected.
6.3 SUMMARY OF CONCLUSIONS.

After interacting with such a large number of respondents (202 teachers, 1042 students and 142 employers) from the polytechnics of four selected states of northern region and after analyzing the data, following main conclusions have been drawn in regard to six identified key factors of organizational effectiveness of polytechnics.

A Instructional Process

A-1 A dynamic, need based curriculum is must for producing right kind of technical man power, which is one of the main objectives of the polytechnics. Though teachers and students perceive curriculum moderately effective, \{ref table 5.46\} the employers feel, curriculum to be less effective in producing right type of technicians.

A-2 The instructional process including curriculum has been perceived most effective by Government Polytechnic Amritsar \{M=3.37, table 5.28\} followed by VTI Rohtak \{M= 3.15, table 5.30\}, GP Sundarnagar \{M= 3.15, table 5.32\} and CP Chandigarh \{M= 3.09, table 5.34\}. The effectiveness of instructional process at GP Amritsar may be attributed to leadership of the Principal leading to academic atmosphere and recent curriculum revision carried out by the Board of Technical Education, Punjab. This trend is also confirmed by highest mean score of Punjab \{M= 3.23, table 5.44\} under instructional process.

A-3 There is strong need to use appropriate teaching method and multi-media for developing better understanding of the subjects and skill of self-learning. Though teachers in general agree with the effectiveness of present teaching methods, but students and employers perceive that student-centered activities e.g. group discussion, quiz contests, projects, seminars etc. be encouraged in teaching-learning process. In order to encourage the students for self-learning, facilities of well
A-4 However aided polytechnics perceive higher effectiveness of instructional process \( \{M=3.37, \text{table 5.48}\} \) as compared to Government Polytechnics. Similarly co-ed polytechnics perceive higher effectiveness of instructional process \( \{M=3.53,\text{table 5.44}\} \) as compared to women polytechnics. Due to higher degree of accountability prevailing in aided polytechnics, teachers take keen interest in teaching - learning process and encourage students for effective learning. Co-ed polytechnics have advantage of offering more than one technical diploma courses and generally have fewer vacancies whereas in women polytechnics, engineering programmes are only one or two e.g. electronics and computer engineering etc. and lack proper infrastructure and staff.

A-5 The effectiveness of Laboratory/Workshop classes have been perceived less effective by all the stake-holders and need to be enhanced by providing appropriate equipment, furniture and opportunity to students to work with their own hands.

A-6 Whilst having dialogue with students, it was revealed that teaching-learning process, by and large is dominated by class-room instructions. Teachers try to cover the prescribed syllabus so that students are able to qualify a written examination. Not much stress is laid on development of competencies, required in a diploma –engineer. Broad competency profile of such diploma – engineers are as follows :

- Ability to read and interpret engineering drawings
- Knowledge of materials and processes involved in construction, manufacturing, erection, installation and fabrication etc.
- Ability to calculate quantities of materials required for executing a job.
- Ability to test the quality of materials and make measurements.
- Knowledge of national and international codes and standards for ensuring quality
- Diagnostic skills.
- Ability of learning to learn, so that these engineers become life-long learners.
- Ability to think so as to solve practical problems and innovate on processes.
- Ability to use computer software for various engineering applications
- Ability to manage men, material and machines leading to optimum utilization of resources.
- Ability to work in a team
- Stress management, time management and good housekeeping abilities.
- Positive attitude etc.

Teaching-learning process by and large is not directed to industrial/field experiences. The students also revealed that well graded tutorial exercises are not provided by majority of teachers. Laboratory experiences are also organized in a routine manner. Students perform practical work in a group of 5-6 students. Competencies of handling the machines and equipment for gaining procedural skills, ability to analyze data and draw conclusions etc. are not being given due importance. In some cases, experiments are demonstrated by the teachers and students are asked to prepare laboratory reports. Same thing is happening in the workshops. The workshop instructions are not planned properly for individualizing the development of skills amongst the students. Development of testing skills, measuring and diagnostic skills etc. are not given due weightage in workshop exercise. It was experienced that number machines and equipment were non-functional because of missing repair and maintenance facilities. Students and teachers did not have repair and maintenance skills of these machines which otherwise is so important for these diploma engineers.

The students also revealed that project work is given to a group of 5-6 students out of which only one or two students take lead and rest are passive and copy the project report. It has also been experienced that majority of polytechnic teachers do not have any linkage with the world of work. There are hardly few teachers who have some knowledge of industrial or field processes. Majority of them has never visited the work sites. They teach in the same manner as they have been taught during their student life decades ago.
To summarize, the entire teaching-learning process was found to be teacher dominated, aimed at completing the courses for qualifying a paper-pencil type examination. The effort should be to make the teaching-learning student oriented by providing them enough opportunities to explore and experience new knowledge by way of tutorials, home assignments, projects, drawing work, laboratory and workshop exercises etc.

A-7 It has been observed that although curriculum is regularly revised and updated in all the states under study, the stake holders in general do not perceive it need based, relevant and sufficient. In a survey conducted by Rastogi\(^1\) it has been observed that stake holders e.g. teachers, students and employers are not clear about the relevance of the curriculum. Students and teachers have very little or no exposure of world of work and hence they are unable to visualize the future role of diploma engineers in industries.

The employers unanimously observe that pass-out diploma engineers from polytechnics lack desired technical and managerial skills. The employers have different views about these desired skills. The large scale industries are interested in overall personality development with right attitudes towards safety, accuracy, punctuality, interpersonal relationship, problem solving etc. They are willing to impart in-plant training for development of desired technical capabilities.

The employers belonging to medium scale industries were interested in specific technical knowledge of the trade so that diploma engineers could take up the shop floor management responsibilities as quickly as possible. The small-scale industry employers were looking for a generalized diploma engineers who should be very strong in technical and managerial skills (including finance and industrial relations)

\(^1\) Rastogi, K.M (1997) A study on Curriculum Effectiveness; as Perceived by the Users. TTTI, Chandigarh (un-published report.)
and should be able to shoulder multifarious responsibilities from the day of joining the organization.

None of these employers, therefore, were sure to blame the curriculum, specifically for the shortcomings in capabilities of the pass-out diploma engineers. They instead made general comments about the effectiveness of the polytechnics. Many employers have very little or no exposure about the procedure and processes followed in polytechnics.

The survey concludes with the observation that present curriculum is satisfactory and need based for offering generalized diploma courses but ends-up with a question that do we need generalized diploma engineers any more which are trained for shop floor supervisory functions? With the advent of new technologies based on computers and networking, perhaps the role of supervisors is fast disappearing and taken over by skilled operators who can man NC controlled machines, programme the work-stations, handle computer controlled operations and implement zero defect manufacturing philosophy. There is a need to replace these generalized courses with specialized courses in the modern manufacturing methods and technologies giving emphasis on development of higher order practical skills and competencies.

The development of curriculum for such specialized courses have to be undertaken by the specialist institutions e.g. TTIIs. The curriculum design activity will have to start from identification of job profile, competencies and responsibilities of diploma engineers in modern industries followed by identification of theoretical and practical components of respective courses. The products of some of the institutes who are already offering such skill oriented programmes, are in great demand in the employment market.
B. Resource Utilization

B-1 Teachers agree with the availability of physical resources { ref table 5.46} but perceive funds availability and building maintenance inadequate. Students were of the view that there is a need to optimally utilize the time in useful activities at polytechnics.

B-2 GP Sundarnagar in particular and HP state in general have perceived highest effectiveness on account of resource utilization {M=3.4, table 5.44} This is perhaps because of implementation of World Bank assisted project for technician education development implemented in HP under which adequate infrastructure has recently been added in polytechnics.

B-3 So far as physical resources are concerned, most of the polytechnics have good infrastructure in terms of space, buildings, furniture and equipment. It has been observed that the teachers generally lack industrial exposure and competenceny to teach subjects requiring emphasis on skill development in students. Further there are 30% -40% vacancies in polytechnics in almost all the states. While looking into the informational resources, the students, by and large are using very inferior text books and other learning materials. The Library register revealed that students and teachers do not utilize the facilities optimally. One of the reasons of lack of optimal utilization of libraries is the inadequacy of library staff. Though there is enough space and large number of books available, their circulation is minimal. The culture of referring books and journals was observed missing from the students and teachers of the polytechnics. Students mostly depend upon notes dictated by the teachers or refer the locally published books which are mostly sub - standard.

Computer centres have been established in majority of these polytechnics but it was observed that many computer systems were non functional and no trained faculty was available to handle the training needs of students and staff in this area.
C Staff Development And Deployment:

C-1 Amongst the polytechnics under study, MCP Jalandhar followed by VTI Rohtak have perceived higher effectiveness of staff development and deployment \( M = 3.09 \) \{table 5.28\} and \( M = 3.03 \) \{table 5.30\} respectively. The results of table 5.44 reveal that HP has perceived highest effectiveness \( M = 3.12 \) as compared to other states. Teachers amongst the three stake holders perceived highest \( M = 3.01 \), \{table 5.46\} on this key factor. HP has been liberal in sending their teachers on industrial training and arranged visits for their students more frequently.

C-2 Aided polytechnics perceived higher effectiveness of staff development and deployment \( M = 3.35 \), \{table 5.48\} as compared to Government Polytechnics. However women Polytechnics perceived higher on this key factor compared to co-ed polytechnics perhaps because of more attention being paid by the directorate towards the staff development in women polytechnics.

C-3 It has been observed that due to implementation of World Bank assisted project for strengthening technician education in 3 out of 4 identified states under study, the states have recruited some new staff and sponsored existing ones for attending staff development programmes. In the absence of teachers profile and identification of their training needs for career growth at state level, the benefit of teachers training have gone to few teachers only as many teachers were sponsored time and again for such courses for which they were not interested. The system ultimately puts the blame on the training agencies e.g. Technical Teachers’ Training Institute, state level teacher - training centres and the personnel departments of the Directorates of Technical education in each state for this problem. Payment of TA/DA was reported to be another hurdle for participants of such staff development programmes.

It has been further experienced that Principals, HODs, and teachers were not clear about the roles they have to perform in meeting the objectives of the
polytechnic, and hence polytechnics were not in a position to visualize the type of training they should impart to their students. The concern has been to cover the prescribed syllabus for qualifying a written examination held towards the end of each semester.

D: Student Personnel Administration

D-1 Student personnel administration has been perceived most effectively being done by HP polytechnics {M=3.31, table 5.44}. This is confirmed by the highest mean value of perception of GPW, Kandaghat {M=3.35, table 5.32} on this key factor. Teachers amongst the three stake holders perceived student personnel administration most effective {M=3.57, table 5.46} because of their belief that awarding sessionals is based on students performance and the system is most dependable.

D-2 Government Polytechnics perceived high on student personnel administration {M=3.58, table 5.48} as compared to aided polytechnics. Women polytechnics perceived higher on this key factor {M=3.78, table 5.50} as compared to co-ed polytechnics.

D-3: Besides what has been said about the students personnel administration, it was observed that there is hardly any guidance and counseling facilities provided to students. One of the reasons of lack of this activity is that the teachers themselves are diffident in providing guidance and counseling regarding the type of opportunities available after passing diploma in regard to employment, further education, self employment, type of courses students should opt for future role, the desired competencies to be developed in the students during the programme, art of appearing in interviews etc. Also the polytechnics by and large have not built up a rapport with the industries and other field organizations so that employers may come forward to provide placements to students through campus interviews. It has also been seen that polytechnics are keen to take help from industries but are not prepared to render
assistance to them in activities e.g. training of their workers through continuing education programmes for updating/upgrading their knowledge and skill, helping them to utilize library facilities, testing facilities etc. This mutual interaction is must for developing a healthy interaction between polytechnics and industries.

**E: Institutional Administration**

**E-1** Aided polytechnics perceived maximum effectiveness on account of institutional administration \(M=3.32\), table 5.48} and co-ed polytechnics perceived higher on this key factor as compared to women polytechnics.

Aided polytechnics have perceived institutional administration comparatively more effective on account of adequacy of planning, staff participation in planning, delegation of power, flexibility, accountability and conducting programmes on industry-institute interaction, community development, entrepreneurship development and environment awareness etc.

**E-2** Teachers amongst the three stakeholders in general perceived institutional administration higher effective \(M=3.10\), table 5.46}. The teachers of Punjab polytechnics perceived institutional administration higher amongst all the four states. \(M=3.58\), table 5.36}

**E-3:** It has been observed during the interaction with the faculty that there is hardly any planning for qualitative improvement in the functioning of polytechnics. In the absence of long term planning and clear directions the things are moving in an haphazard manner. There are hardly any meetings organized between Principals, teachers and students. These are necessary for inter-departmental coordination and to plan the instructional process and also to find out gaps in the process so that remedial actions may be taken. Institutional administration is going on just in a routine manner.
Co-curricular activities e.g. games, sports, declamation contest, paper reading competition, dance drama festivals etc are not being organized in many polytechnics on regular basis. These co-curricular activities help the students a great deal in shaping their behavior and attitude for development of inter-personal skills, communication skill, personality, positive attitude and values.

F. Institutional Climate

F-1 Polytechnics of Punjab have highest mean value of their perception about the effectiveness of institutional climate \(M = 3.56, \text{table 5.44}\) amongst the four states. This was further supported by the highest mean value of MCP Jalandhar in Punjab amongst all the thirteen polytechnics included in the study. Teachers have perceived highest on institutional climate amongst the stakeholders \(\text{ref table 5.46}\).

F-2 The aided polytechnics in the identified states have perceived higher \(M = 3.78, \text{table 5.48}\) as compared to Government polytechnics. It was observed that aided polytechnics has a climate which is growth oriented, satisfying and motivating for hard work. Staff and students of aided polytechnics identify themselves with the polytechnic and have a feeling of belongingness. The co-ed polytechnics perceived organizational climate more conducive than women polytechnics \(\text{ref table 5.50}\).

F-3: The climate in any organization is based on two factors: the academic environment and the social environment. So for as academic environment is concerned, it is important to create competencies in the teachers to handle effectively the teaching – learning process, render consistency to industries and engaged in community development activities. It was observed that polytechnics are not utilizing their full potentials in rendering assistance to industries, community development and continuing education programmes. The institutional climate should develop a sense of competition amongst the students for achieving excellence through creative activities in laboratories and workshops, solving problems through project work and to excel at the state level performance.
So far as the social environment is concerned, the leadership may pursue the
development of healthy inter-personnel relationship amongst the faculty and students.
The interaction with the society may be increased by organizing social service
camps, blood donation camps, technical exhibitions, environmental protection
projects etc. Students should always be encouraged to participate in such activities
so that they understand problems of the society and grow as a healthy useful citizen.

6.5 OVERALL-ORGANIZATIONAL EFFECTIVENESS OF
POLYTECHNICS

The results of data analysis has been tabulated in table 6.1. The HP
polytechnics perceived higher organizational effectiveness on four out of six key
factors and Punjab polytechnics perceived higher effectiveness on remaining two
factors. HP Polytechnics are, therefore more effective as compared to Punjab,
Haryana and Chandigarh. Chandigarh Polytechnics perceived lowest organizational
effectiveness on five out of six key factors and Haryana ranked lowest on remaining
one key factor. Therefore, Chandigarh polytechnics ranked lowest in organizational
effectiveness. Most probably the reason with Chandigarh polytechnics is their non-
coverage under world bank assisted project for technician education development,
lack of planning and large number of teacher vacancies.

Amongst the stake holders, teachers perceived the organizational effectiveness
highest on all the six key factors and employers perceived the lowest. Teachers on
the present status of various key factors were in agreement because of lack of
enthusiasm for change and accepted the situation as it prevailed. Employers on the
other hand were very much concerned with the capabilities of pass-out technicians
from the polytechnics and blamed the curriculum implementation process in general.
They perceived institutional administration the least effective.

The teachers of co-ed polytechnics perceived the organizational effectiveness
highest on three key factors and remaining three were claimed high by teachers of
women polytechnics. The employers of students of women polytechnics perceived
lowest organizational effectiveness on four key factors and that of co-ed polytechnics
on remaining two. Therefore, no clear indication is available between the comparison of effectiveness of these two types of polytechnics.

The stake holders of aided polytechnics perceived the organizational effectiveness highest on five key factors and Government polytechnics claimed highest on remaining one factor. The employers of Government polytechnics perceived lowest effectiveness on five key factors and that of aided polytechnics on remaining one. It may, therefore be concluded that organizational effectiveness of aided polytechnics have been perceived higher by their stake holders as compared to the Government polytechnics.

Government polytechnic Sundarnagar on two factors, MCP Jalandhar on two factors, Government polytechnic Amritsar on one factor and GPW Jalandhar on one factor have perceived highest effectiveness. GPW Ambala perceived lowest on five key factors and GPW Chandigarh on remaining one key factor have perceived lowest effectiveness. GPW Sundarnagar, MCP Jalandhar, GP Amritsar and GPW Jalandhar have been perceived more effective by their stake holder while GPW, Ambala have been perceived least effective.