A STUDY ON IDENTIFYING GAPS BETWEEN THE EMPLOYERS DEMAND AND GRADUATES SKILL FROM THE POLYTECHNIC INSTITUTES OF BANGLADESH

RESEARCH REPORT

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Declaration

I declared that this thesis entitled "**A Study on Identifying Gaps between the Employers Demand and Graduates Skill from the Polytechnic Institutes of Bangladesh"** is the results of my own research except as cited in references. The research report mentioned above has not been filed anywhere in its entirety or in any part. This research has been funded by the Directorate of Technical Education, Technical and Madrasah Education Division, Ministry of Education, Bangladesh.

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Abstract

This study provides a view on the gap between the expectation of employers and the quality of polytechnic graduates. Data has been collected with the help of survey questionnaire having both open ended and close ended question. Collected data has been analyzed with the help of frequency tools of SPSS. Findings show that the most required qualities expected by employers from the polytechnic graduates are academic qualifications, experience, professional knowledge, communication skills, IT skills and physical fitness. However, a significant portion of the respondents working in the managerial posts has given on the opinion that there remains a substantial gap between the quality of polytechnic graduates and quality standard needed by the job providing organizations. The findings of this study conclude that in Bangladesh there are large number of students are passing diploma engineering from polytechnic institutes every year. But a significant portion of them can not satisfy the job providing organizations due to their skill gap. As a result, the job providers fulfill their demand by migrant skill manpower. A significant amount of skill gap has been found from this study. After analyzing the data found from the survey questionnaires, 28% skill gap for ability to guide and train subordinate, 37% for proficiency in English, 27% for IT skill, 16% for academic qualification, 27% for professional knowledge, 25% for experience, 28% professional training, 12% physical fitness and 33% skill gap for security and safety measures have been found in this study. Maximum skill gap (37%) for proficiency in English and minimum skill gap (12%) for physical fitness have been found. This study also shows that 62% respondents agreed that the polytechnic graduates are competent enough to meet the challenges of modern job market. 19% of the respondents disagreed and 3% strongly agreed on this issue. They also have given importance that curriculum have to be updated on the basis of the demand of job market. Industry – Institution linkage is very essential to produce more skill workforce.

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Chapter 1

Introduction

1.1 Background of the study

The demand of education for economic purposes due to the pressure of technological progress and modernization has been constantly on the rise in most countries during the 21st century. International comparisons have for some time highlighted the importance of increased productivity of human resources and hence to invest in education. Technical Education is usual as a weapon to implement the hopes and aspirations of a nation for the development of a country. Economic development is largely dependent on its capability to use and develop modern technology. To do this suitably skilled manpower at different levels and in different varieties needs to be produced so as to help country's work activities. The objectives of diploma engineering program in Bangladesh are to produce required skilled diploma graduates at different levels and fields to meet the need of industry and various service organizations operating within the country. Technical manpower is essential to industrial development. Adequacy of the supply of manpower depends upon their numbers, quality of skills attained and proper utilization. As a result, it became a necessity to strengthen and develop the diploma engineering programme in Bangladesh. Education looks at the general development of students that will give them a wide range of opportunities and choices to prepare them after graduation while industries look for technicians and employees with specific skills who will fit directly into the system. Having this seemingly obvious discrepancy in their respective purposes, there is a need to create a platform where institutes and industry can meet eye to eye, share ideas and regularly interact. Forms of interaction can take place with the aim to understand and jointly plan pre-employment and in-service training.

The labor market in Bangladesh faces about 30 percent skill gap, highlighting the challenges the country faces in equipping its workers with required skill-sets, according to a study revealed today**.** The Bangladesh Institute of Development Studies (BIDS) conducted the study on "the labor market on skill demand, supply and mismatch" in association with the Skill for Employment Investment Programme (SEIP), a project of the finance ministry [1]. The skill gap is a firm-level measure of skill mismatch based on the employer's perception of the ability of employees. It

assesses the degree to which workers lack adequate competencies to successfully perform their duties. According to the study, the skill gap is higher for professionals and technical persons. This suggests that training programmes need to gradually move towards technologically sophisticated industries. Female workers are more skilled than their male counterpart's in women-dominated industries such as the readymade garment sector. The skill gap is also found to be higher for senior-level technical positions it said. Many countries are experiencing a persistent gap between the skills needed in the labour market and those offered by the workforce. Skills anticipation is a strategic and systematic process through which labor market actors identify and prepare to meet future skills needs, thus helping to avoid potential gaps between skills demand and supply. A skills anticipation strategy enables training providers, young people, policy-makers, employers and workers to make better educational and training choices, and through institutional mechanisms and information resources leads to improved use of skills and human capital development.

The formal TVET system provides limited opportunities to the primary target beneficiaries, particularly students from poor families and other disadvantaged groups. Successful completion of class (or grade) 8 is required for entry into formal TVET programs in the secondary school certificate (vocational). After passing secondary level from vocational Institutions and formal SSC program students enter into diploma in engineering program. The Branch's area of work on Skills Strategies for Future Labor Markets helps ILO constituents to develop forward looking approaches to adapt skills development to the labor market demand and to respond to industrial sector, trade, technology and environmental policies and challenges. Technical support provided by this area of work includes assistance in building systems and institutions to anticipate skill needs and minimize skills mismatches. It also develops, adapts and applies knowledge and tools on skills anticipation and improved labor market outcomes of learning. Young people across the world aren't able to identify or acquire the skills needed for today's job market, contributing to a global skills gap and exacerbating youth unemployment, according to a new report published today by generation unlimited, PWC and UNICEF. There are many reasons for going to university, including – naturally – a love of the subject to be studied, and the opportunity to experience a different way of life. Higher education is much more than a production line for work-ready graduates. Azim M. & Ahmed Z. A. carried on a study on Employment Scenario of Bangladesh: A Study on the Gap between Expectations of Employers and the Quality of Graduates [2]. They found that

majority (60.7%) of the sample employers were of the opinion that the educational institutions were offering right courses or degrees to their students in terms of employability and rest of them (39. 3%) thought that there was a gap between the quality of our university graduates and the needs of the practical world. Many higher education programs are explicitly vocational, especially medicine, engineering, accountancy and law. Other courses are less directly vocational (Lowden, Hall, Dr Elliot, & Lewin, 2011) [3]. Nevertheless, they help students develop analytical, synoptic and presentational skills which are highly valued in the modern society. But is that enough? Some graduates and their employers are of the opinion that more could be done to develop students' wider skills and attributes, including team-working, communication, leadership, critical thinking and problem solving. These are known collectively as employability skills. Findings show that everyone seems to agree that work placements and internships make a huge difference to employability skills (Lowden et. al. (2011). An important objective of many degree programs is to prepare students for the workplace. Students of professional study programs have what can be regarded as an additional benefit or advantage to join a particular profession and have a clearly identified career path—in return, employers often expect graduates of such programs to be instantly able to fee-earn. Academics involved with such programs have to balance such demands of employers with broader educational aims that will prepare graduates for not just the immediate work entry years but a life-long career with suitable skills that will allow them to be adaptable to changing work practices and market skill needs (Davies, Crete,& Poon, 1999) [4]. Among the skills most important to employers are communication; people skills; basic reading, writing, and arithmetic; and industry-specific skills. In fact, more than nine in ten respondents indicated that the above-mentioned skills are important to their organization. Moreover, employers are also of the opinion that they do not have great difficulty finding applicants with these important skills. Larger business houses (those with more than 500 employees) are more likely to say that these skills are more important to their companies than smaller business entities (those with 20-499 employees) and they also found it difficult to attract applicants with these skills (Perron, 2011) [5]. Employers want graduates with relevant subject specific skills, knowledge and understanding, but in addition to this are looking for well-developed generic skills in a number of areas (Harvey et al. (1997) [6]. The Pedagogy for Employability Group (2004) provided a list derived from research carried out over the last 25 years and suggests that employers expect to find that the following generic skills have been developed in graduates: imagination/creativity, adaptability/flexibility, willingness to learn, independent working/autonomy, working in a team, ability to manage others, ability to

work under pressure, good oral communication, communication in writing Employment Scenario in Bangladesh for varied purposes/audiences, numeracy, attention to detail, time management, assumption of responsibility and for making decisions, planning, coordinating and organizing ability, and ability to use new technologies (not included in the list above but mentioned in many others and an important element) [7]. Lan et al. (2011) indicated that English is widely used in the organizations surveyed because workplace tasks and transactions are carried out in English. All the four skills of speaking, writing, reading and listening are required for these tasks. In view of this, it is essential for graduates to be proficient in English to secure employment as well as to perform efficiently at work [8]. The National Association of Colleges and Employers (NACE) identified sixteen characteristics that employers are looking for in potential employees. They are: Ability to communicate, Intelligence, Self-confidence, Willingness to accept responsibility, Initiative, Leadership, Energy level, Imagination, Flexibility, Interpersonal skills, Self-knowledge, Ability to handle conflict, Competitiveness, Goal achievement, Vocational skills, and Direction (The University of Texas at Austin, n.d.) [9].

Lockhart (2013) opined that employers aren't looking for a perfect employee; they are looking for the right employee. With some guidance and training, the student or young adult will become a great employee. Employers know employees. They know what their business needs to succeed [10]. Employees must operate with employers' objectives. Employees can meet the objectives of the employers by: being on time – always, following directions and accept feedback, not texting or talking on cell phone when working, maintaining a positive attitude at all times, treating your supervisor and co-workers with respect, taking job responsibilities seriously, avoiding the "that's not my job!" mentality. Eraut (1994) observed that the norms of higher education tend to favor scientific or propositional knowledge rather than professional competencies. The knowledge base is likely to be couched in technical/scientific terms rather than practical terms. Typically, technical knowledge is capable of written codification and could be regarded as a kind of propositional knowledge, commonly expressed in curricula [11]. The University of Kent, UK summarized the skills which were most often deemed important based on a number of surveys on the skills required for graduates undertaken by Microsoft, Target Jobs, the BBC, Prospects, NACE and AGR and other organizations. They are: Verbal Communication, Teamwork, Commercial Awareness, Analyzing & Investigating, Initiative/Self-Motivation, Drive, Written Communication, Planning & Organizing, Flexibility, Time Management. Also some more skills are found important which are: global skills, negotiating and persuading, leadership,

numeracy, computing skills, self-awareness, personal impact/confidence, lifelong learning, stress tolerance, integrity, independence, developing professionalism, action planning, decision making, interpersonal sensitivity and creativity[12]. Companies that expect to succeed in the long term must pay as much attention to their new hires as to existing personnel. Building and maintaining a strong and sustainable talent supply chain is dependent on better preparing and developing entry-level employees. With better planning and investments in the training and development of newer employees, companies can continue to keep their talent supply chain flowing in the years ahead (Smith, La Velle, & Abbatiello, 2014) [13].

Identifying gaps between the employers demand and graduates skill from the Polytechnic Institutes of Bangladesh will play a significant roll on producing skilled workforce to meet the demand of modern job market. The findings of this study will focus on the perceptions of the employers on various dimensions like required qualities of the graduate job seekers, qualities of existing employees, internship programs, training facilities, and role of educational institutions.

1.2. Statement of the Problem: After passing from educational institutions, graduates go to the job market but due to lack of proper skills needed for fulfill the requirements of job providers, they are not accepted according to own satisfaction. An important objective of many degree programs is to prepare students for the workplace. Students of professional study programs have what can be regarded as an additional benefit or advantage to join a particular profession and have a clearly identified career path—in return, employers often expect graduates of such programs to be instantly able to fee-earn. Academics involved with such programs have to balance such demands of employers with broader educational aims that will prepare graduates for not just the immediate work entry years but a life-long career with suitable skills that will allow them to be adaptable to changing work practices and market skill needs.

1.3. Importance and Rationale of the Study: The outcomes of this study hopefully play a significant role on TVET sectors as wee as any other sector of Bangladesh. After passing from institutions, diploma graduates go to the work field and a significant numbers of them are not satisfied due to failure to fulfill the demand of job providing organizations. This study will be very helpful to strengthen TVET sector by identifying skill gap of graduates with some guidance and training, the student or young adult will become a great employee. Employers know employees. They know what their business needs to succeed. Employees must operate with

employers' objectives. Employees can meet the objectives of the employers by: being on time – always, following directions and accept feedback, not texting or talking on cell phone when working, maintaining a positive attitude at all times, treating your supervisor and co-workers with respect, taking job responsibilities seriously, avoiding the "that's not my job!" mentality. Employers are looking for the right workforce to keep their operations running smoothly and provide their customers with an excellent experience.

1.4. Objectives of the Study: The objective of the present study is to analyze labor supply and demand to inform the government to better plan the capacity and quality of skills training systems according to projected skills demands from job market. The skills gap analysis will inform, quantitatively and qualitatively what is needed for the future Bangladesh economy in terms of skilled workforce, especially in priority sectors identified in the national economic development plan..The main objectives of this study are:

- To study about the present skills of the Polytechnic graduates.
- To identify the market responsive skills.
- To find out the gaps between market responsive skills and skills of the Polytechnic graduates.

1.5. Scope and Limitations of this Study: Rapid and drastic changes in economic growth nowadays are creating higher demands for employability skills in the workforce. Labor market is becoming more competitive and depends on quality of knowledge and skills as the globalization come across in all industry. The employers have high expectations on fresh graduates to perform in their organization soon after they are hired. There are sufficient scopes to conduct this study. There are many local industries those are helpful to collect necessary data for the research. But in case of collecting data from the reputed organizations, it is very difficult to conduct this study because of showing less interest for providing necessary information.

1.6. Visible Impact of the Study on TVET: The gaps between market responsive demand and supply of workforce have been found by this study. Hence, market responsive demand and supply gap for TVET graduates may be minimized and ultimately TVET sector will be benefited.

1.7 Research Methodology: This study has been utilized a qualitative approach whereby survey questionnaires have been handed over personally to higher authority and HR managers of 09 renowned organizations of Bangladesh. Total 44 respondents of 09 organizations took part in questionnaire survey. These sample employers or HR managers have been selected randomly. The organizations include group of companies, public

companies, partnership firms and sole proprietorship firms in the sectors like power generation, government organizations, private industries of Bangladesh. There are two sections in the questionnaire. The questions in the first section are to obtain general information such as the name and designation of the respondent with the name of the organization. The questions in the second section are designed to get information on the present skill of polytechnic graduates and expectation of the employers and HR managers. The questionnaires are included both close-ended and open ended questions in the format of Multiple Choice Question, Dichotomous Question, Liker Question, Contingency Questions, and Matrix Questions.

The collected data has been analyzed with the use of SPSS software. The data has been tabulated and coded, after which they have been computed and presented. The findings have been be presented in graphical and descriptive form.

1.8 Tools of Data Collection: This study utilized a qualitative approach whereby a survey questionnaire has been handed over personally to employers or HR managers of 09 renowned organizations and 44 nos. of respondents took part in this questionnaire survey.

1.9 Conceptual Framework of this Research: Data has been collected through direct questionnaire to different types of renowned industries, government organizations and power Generation Company of Bangladesh.

1.10 Research Area/Region: Bogura, Sirajgonj and Gazipur districts of Bangladesh.

Chapter-2

Findings

2.1 Survey questionnaires

Mainly two types of survey questionnaires have been handed over personally to higher authority and HR managers of 09 renowned organizations of Bangladesh for identifying skill gap of polytechnic graduates on 09 categories of very essential skills for modern job market.

2.1.1 Current level of technical skill provided by polytechnic graduates

How would you rate your diploma graduates in terms of following qualities? Please respond to the questions by indicating on a scale from 1~5 where your experience lies. Evaluations of 05 respondents of organization 7 are presented in the following table as sample.

Table. 2.1: Present skill of polytechnic graduates in Bangladesh.

Name of the skills	**Rating** (5 for very good, 4 for good, 3 for average, 2 for below average, 1 for poor)					
	Evaluation of 5 Five) respondents of organization 7					
	Resp. 1	Resp.2	Resp.3	Resp. 4	Resp. 5	Mean
Ability to guide & train subordinates	3	3	3	3	2	2.8
Proficiency in English	2	2	1	2	1	1.6
IT skills	3	3	2	3	3	2.8
Academic qualification	4	4	4	4	3	3.8
Professional knowledge	3	3	3	3	3	3
Experience	3	3	2	4	2	2.8
Professional training	2	2	2	2	3	2.2
Physical fitness	5	5	4	4	3	4.2
Security & safety measures	3	3	3	3	1	2.6

2.1.2 Bangladeshi Polytechnic graduates are competent enough to take the challenge of Modern job requirement:- do you agree?

Strongly Agree (%)	**Agree (%)**	**Neither Agree nor Disagree(%)**	**Disagree (%)**	**Strongly Disagree(%)**
2.7	**62.2**	**13.5**	**18.9**	**2.7**

2.1.3 Technical skills required to perform at desired level (Market Demand)

To what extent do you think the following Technical skills are required for the diploma graduates to perform at desired level? Please respond to the questions by indicating on a scale from 1~5 where your experience lies. Evaluations of 05 respondents of organization 7 are presented in the following table as sample.

Table. 2.2: Market demand

Name of the skills	**Rating** (5 for very good, 4 for good, 3 for average, 2 for below average, 1 for poor)					
	Evaluation of 5 Five) respondents of organization 7					
	Resp. 1	Resp.2	Resp.3	Resp. 4	Resp.5	Mean
Ability to guide & train subordinates	4	4	4	4	5	4.2
Proficiency in English	4	4	4	4	4	4
IT skills	5	5	5	5	4	4.8
Academic qualification	5	5	5	4	4	4.6
Professional knowledge	4	4	4	4	4	4
Experience	4	4	4	4	4	4
Professional training	4	4	5	4	5	4.4
Physical fitness	5	5	5	4	4	4.6
Security & safety measures	5	5	5	5	5	5

2.1Findings

Survey questionnaire has been thrown to 44 respondents of 09 renowned organizations of Bangladesh on the present level of skill and found data has been presented in the following table.

3.2.1 Present skill level of Polytechnic graduates

Table. 2.3: Present skill level of Polytechnic graduates

Name of the Skills	Mean value of Skill Level	Skill Level	
Ability to guide & train subordinates	3.02	Average	
Proficiency in English	2.07	Below Average	
IT skills	2.84	Average	
Academic qualification	3.59	Good	
Professional knowledge	2.91	Average	
Experience	2.70	Average	
Professional training	2.43	Below Average	
Physical fitness	3.80	Good	
Security & safety measures	2.84	Average	

From the table it is seen that the respondents have expressed their opinion on 09 categories of technical skills from diploma graduates of Bangladesh. It is seen from the table that lowest level of skill for proficiency in English and highest level of skill for physical fitness is found from the polytechnic graduates of Bangladesh.

2.2.2 Technical skills required to perform at desired level (Market Demand)

Survey questionnaire has been thrown to 44 respondents of 09 renowned organizations of Bangladesh on the Technical skills required to perform at desired level (Market Demand) and found data has been presented in the following table.

Table 2.4: Technical skills required to perform at desired level (Market Demand)

Name of the Skills	Mean value of Skill Level	Skill Level	
Ability to guide & train subordinates	4.43	Very Good	
Proficiency in English	3.93	Good	
IT skills	4.18	Good	
Academic qualification	4.39	Very Good	
Professional knowledge	4.27	Very Good	
Experience	3.95	Good	
Professional training	3.82	Good	
Physical fitness	4.41	Very Good	
Security & safety measures	4.48	Very Good	

From the table it is seen that the respondents have expressed their opinion on 09 categories of technical skills for diploma graduates of Bangladesh. It is found from the table that the respondents have expressed highest level of evaluation as very good on the skills Security & safety measures, Physical fitness, Academic qualification, Professional knowledge and ability to guide & train subordinates to perform the job at desired level. On the other hand, the respondents have placed their evaluation on Proficiency in English, IT Skills, Experience and Professional Training as good to fulfill the demand of modern job requirements.

Chapter 3

Results and Discussion

3.1 Skill Gap analysis of polytechnic graduates in Bangladesh

Data has been collected through survey questionnaires from 44 respondents of 09 renowned organizations of Bangladesh on 09 categories present level of technical skills of polytechnic graduates and required level of skills to perform job satisfactorily (market demand) for the same skills. Collected data has been analyzed and described below.

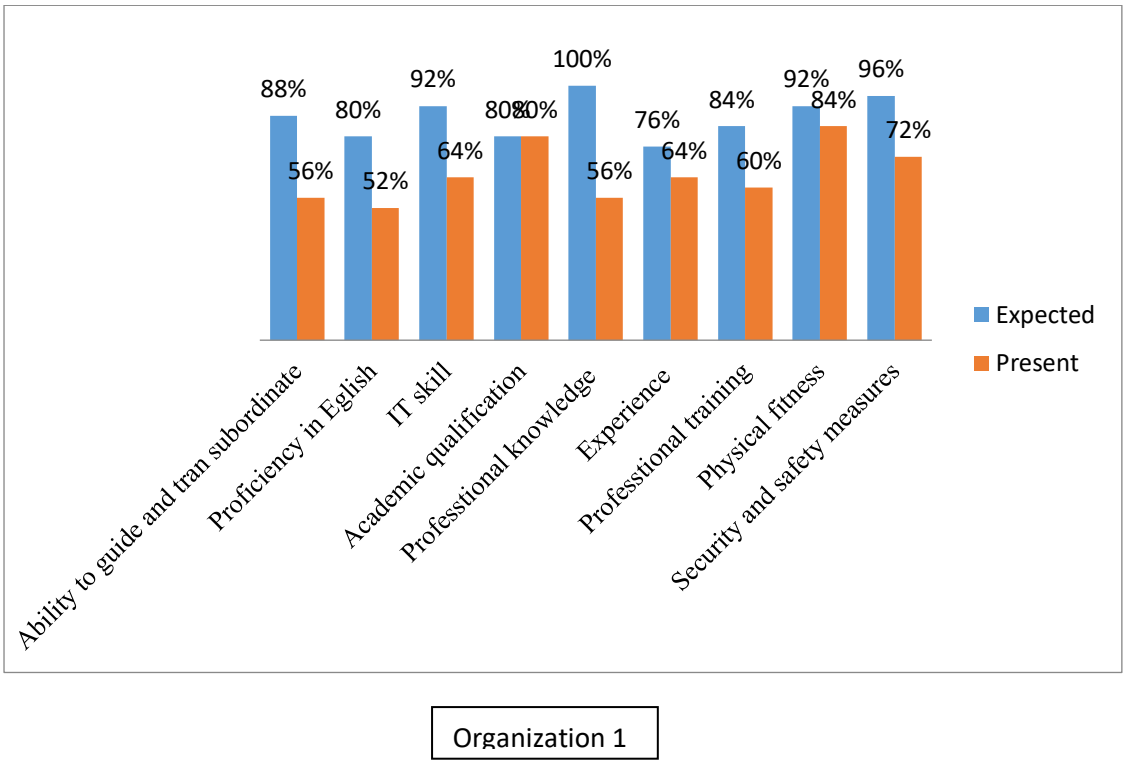
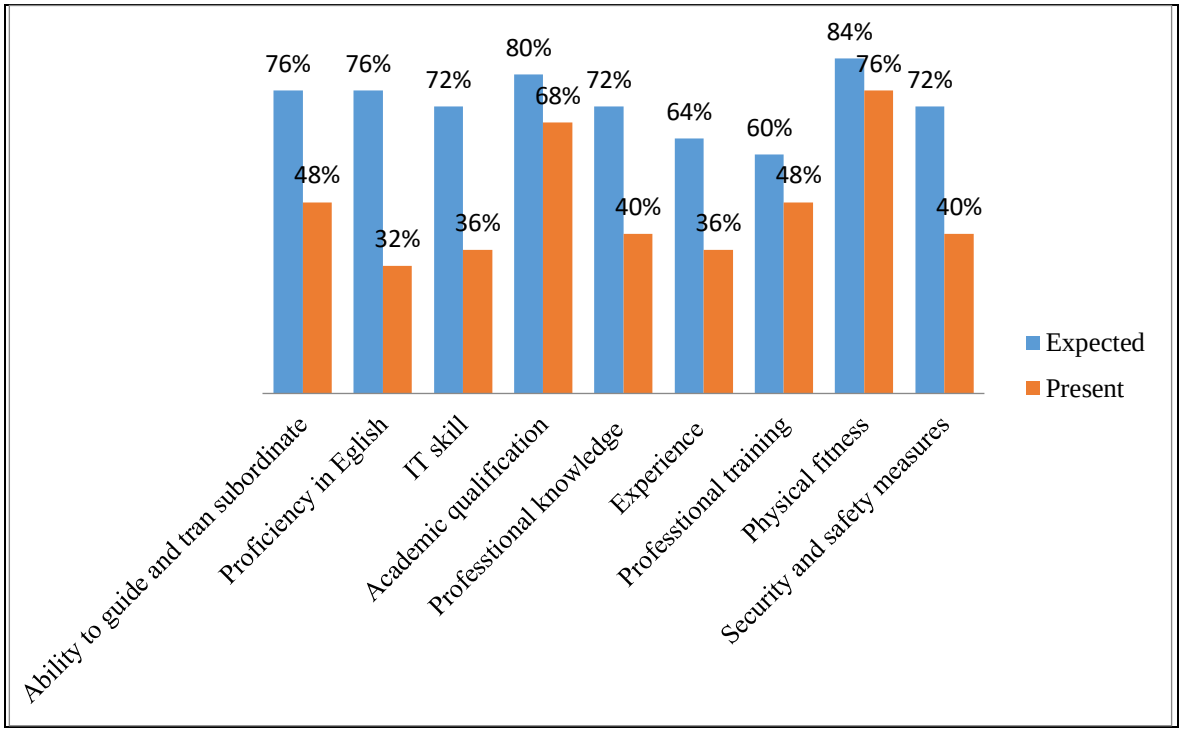


Fig. 3.1: Comparison between expected and present skills on 09 categories of technical Skills for organization 1.

The graph shown in Fig. 3.1 represents the analysis of skill gap for organization 1. It is seen from the figure that the respondents have expressed their opinion on present skills and expected skills (Market demand) from polytechnic graduates of Bangladesh. From the figure it is also seen that maximum skill gap (44%) for professional knowledge and minimum skill gap (8%) for physical fitness is found.

The graph shown in Fig. 3.2 represents the opinion on 09 categories of technical skills from the respondents of organization 2. The comparison between expected skills and present skills has been shown in the figure.



Organization 2

Fig. 3.2: Comparison between expected and present skills on 09 categories of technical skills for organization 2.

The graph shown in Fig. 3.2 represents that the respondents have expressed their opinion on present skills and expected skills (Market demand) from polytechnic graduates of Bangladesh. From the figure it is seen that maximum skill gap (44%) for proficiency in English and minimum skill gap for physical fitness (8%) is found from the opinion of the respondents of organization 2.

The graph shown in Fig. 3.3 represents the opinion on 09 categories of technical skills from the respondents of organization 3. The comparison between expected skills and present skills has been shown in the figure.

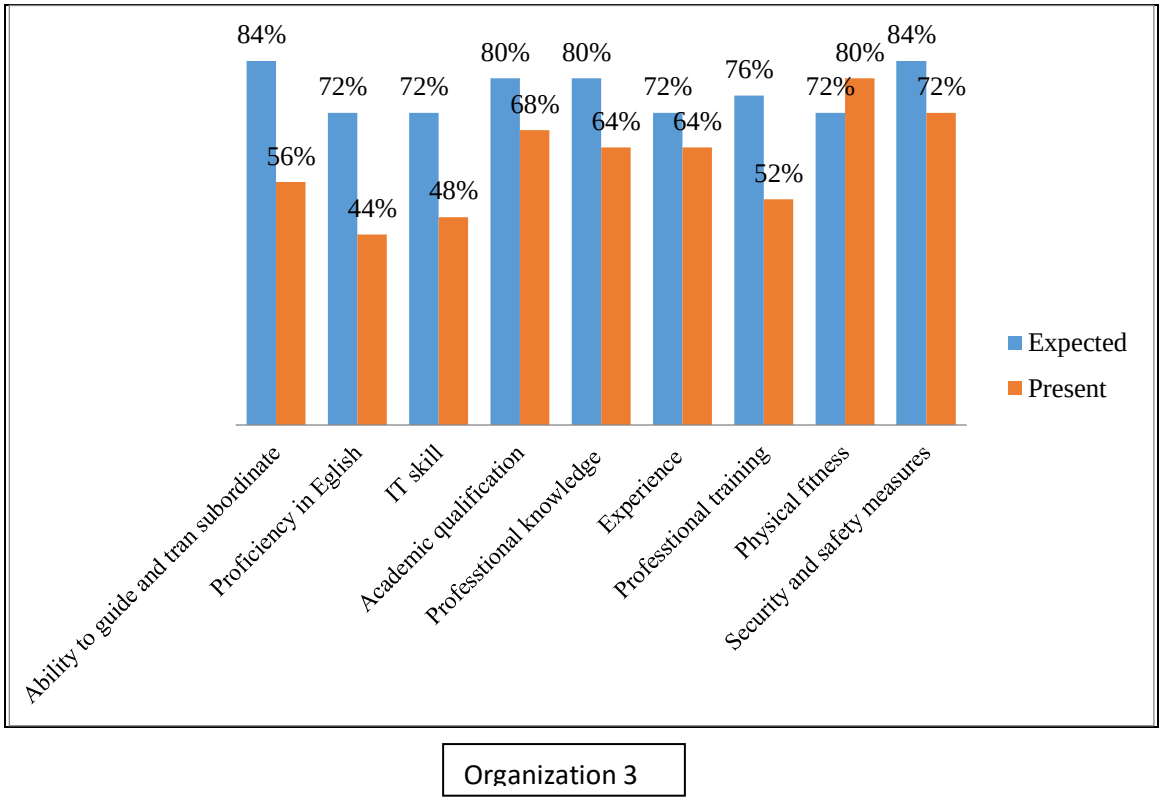


Fig. 3.3: Comparison between expected and present skills on 09 categories of technical skills for organization 1.

Figure 3.3 represents the comparison between expected skill (market demand) and present skill from the polytechnic graduates of Bangladesh for organization 3. It is seen from the figure that maximum (28%) skill gap for ability to guide and train subordinate and for proficiency in English is found. It is also seen from the figure that minimum skill gap (8%) for physical fitness and experience is found for this organization.

The graph shown in **Fig. 3.4** represents the Comparison between expected and present skills on 09 categories of technical skills for organization 4. The respondents of this organization have expressed their opinion on the basis of their experience during supervision of diploma graduates from different polytechnics of Bangladesh.

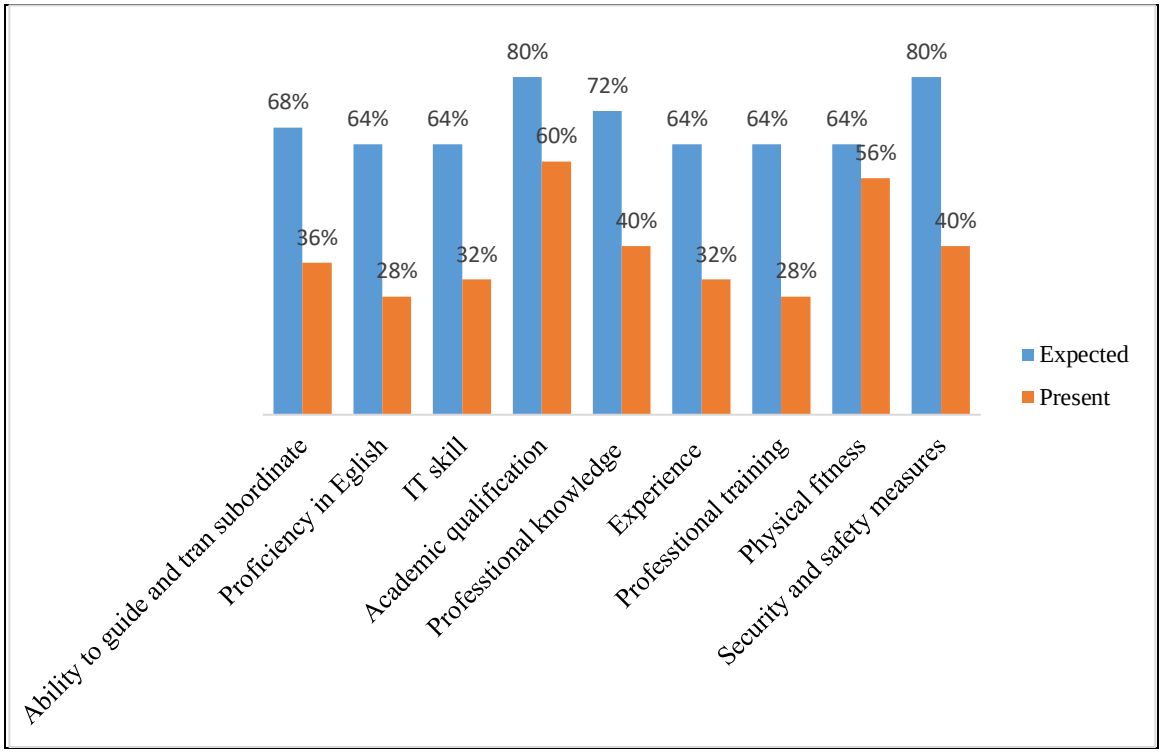


Fig. 3.4: Comparison between expected and present skills on 09 categories of technical skills for organization 4.

The graph shown in **Fig. 3.4** represents that the respondents have expressed their opinion on present skills and expected skills (Market demand) from polytechnic graduates of Bangladesh. From the figure it is seen that maximum skill gap (40%) for security and safety measures and minimum skill gap for physical fitness (8%) is found from the opinion of the respondents of organization 4.

The graph shown in **Fig. 3.5** represents the opinion on 09 categories of technical skills from the respondents of organization 3. The comparison between expected skills and present skills has been shown in the figure during long term experience on supervising polytechnic graduates of Bangladesh.

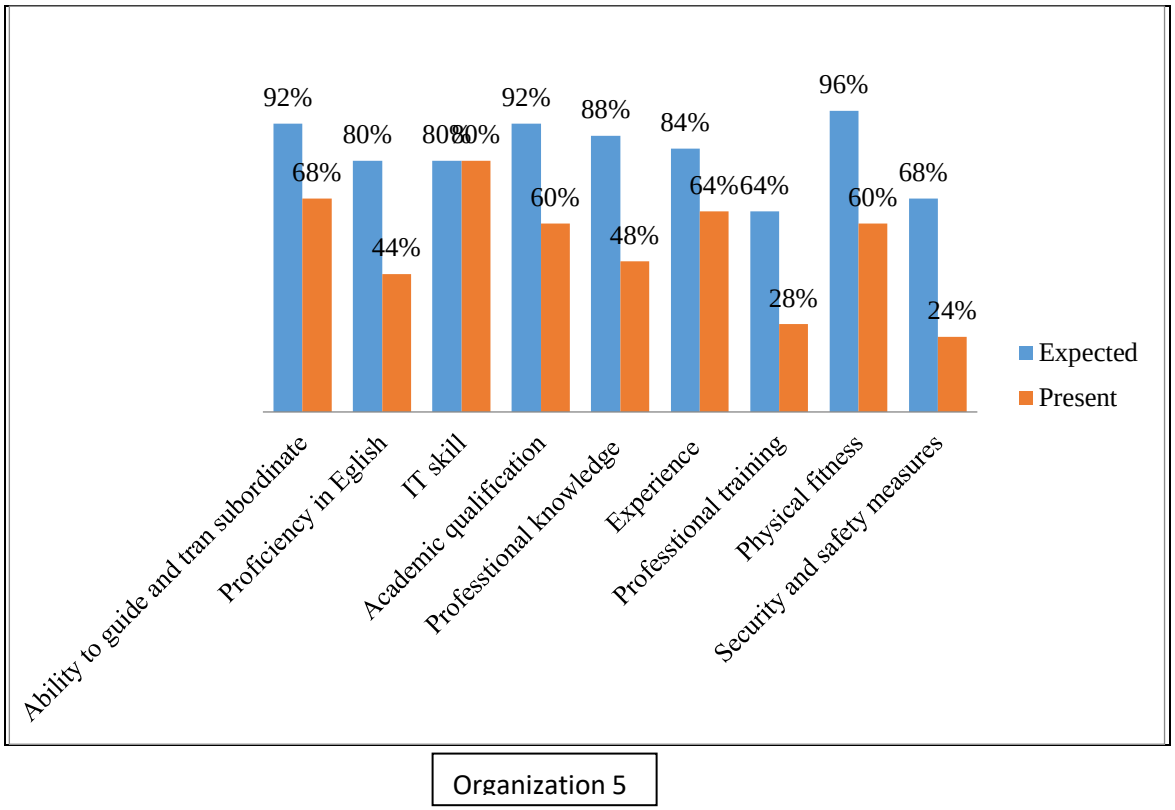


Fig. 3.5: Comparison between expected and present skills on 09 categories of technical skills for organization 5.

Figure 3.5 represents the comparison between expected skill (market demand) and present skill from the polytechnic graduates of Bangladesh for organization 5. It is seen from the figure that maximum (44%) skill gap for security and safety measures and minimum skill gap (0%) for IT skill is found for this organization.

The graph shown in **Fig. 3.6** represents the opinion on current level of skills and desired level of skills for organization 6. The respondents of this organization have expressed their opinion on the skill level of polytechnic graduates of Bangladesh and required level of skills to perform the job satisfactorily.

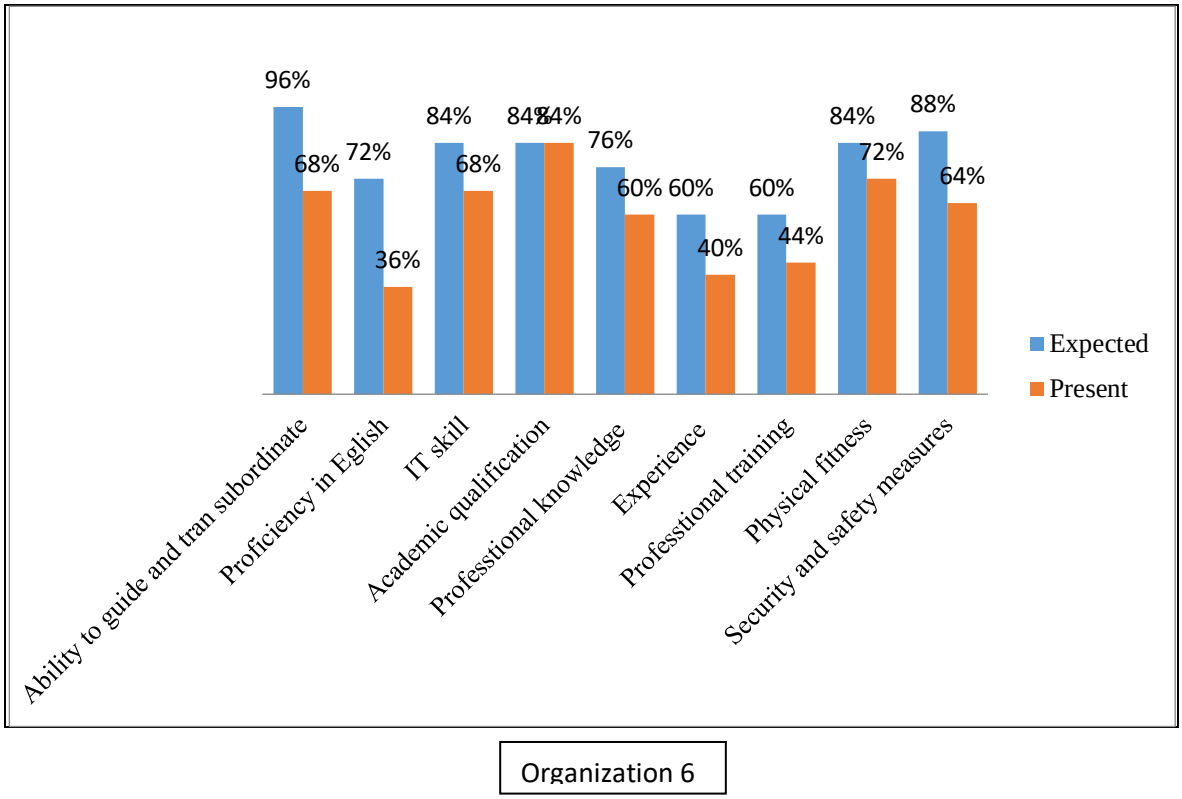


Fig. 3.6: Comparison between expected and present skills on 09 categories of technical skills for organization 6.

The graph shown in **Fig. 3.6** represents that the respondents have expressed their opinion on present skills and expected skills (Market demand) from polytechnic graduates of Bangladesh. From the figure it is seen that maximum skill gap (36%) for proficiency in English and minimum skill gap for academic qualification (00%) is found from the opinion of the respondents of organization 6.

The graph shown in **Fig. 3.7** represents the opinion on 09 categories of technical skills from the respondents of organization 7. The comparison between expected skills and present skills has been shown in the figure.

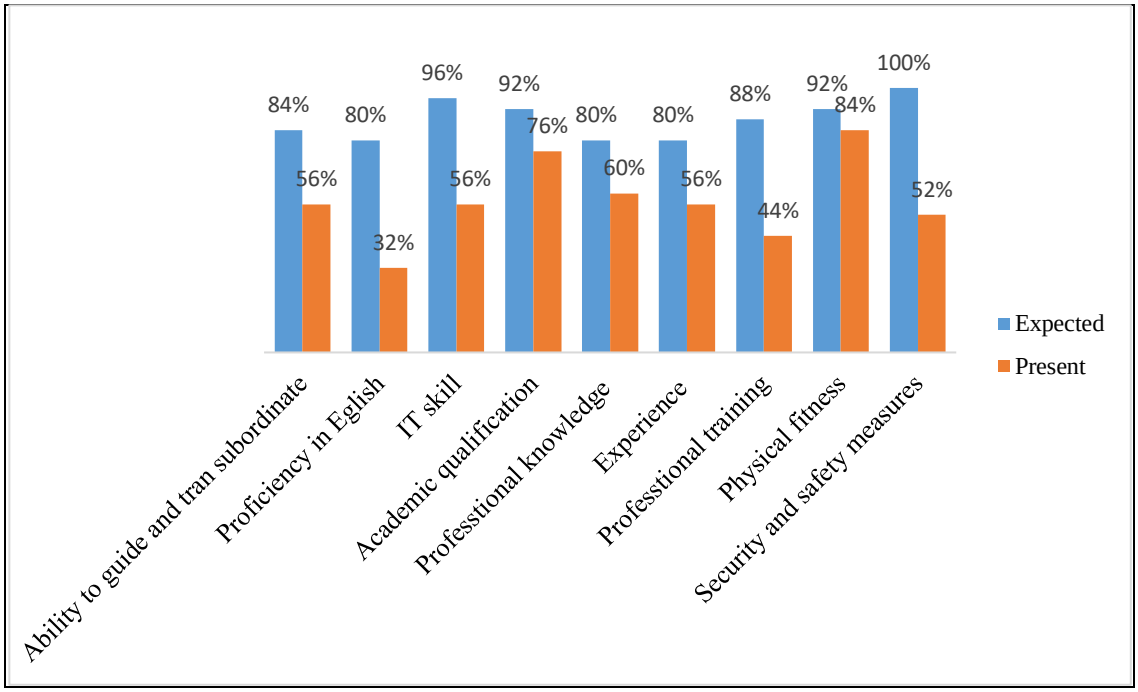


Fig. 3.7: Comparison between expected and present skills on 09 categories of technical skills for organization 7.

Figure 3.7 represents the comparison between expected skill (market demand) and present skill from the polytechnic graduates of Bangladesh for organization 7. It is seen from the figure that maximum (48%) skill gap for proficiency in English and for security and safety measures is found. It is also seen from the figure that minimum skill gap (8%) for physical fitness is found for this organization.

Figure 3.8 represents the comparison between expected skill (market demand) and present skill from the polytechnic graduates of Bangladesh for organization 8. The respondents have presented their opinion on the basis of long term supervision on diploma graduates from different polytechnics of Bangladesh. It is seen from the figure that maximum (36%) skill gap for experience and professional training and minimum skill gap (4%) for physical fitness is found for this organization.

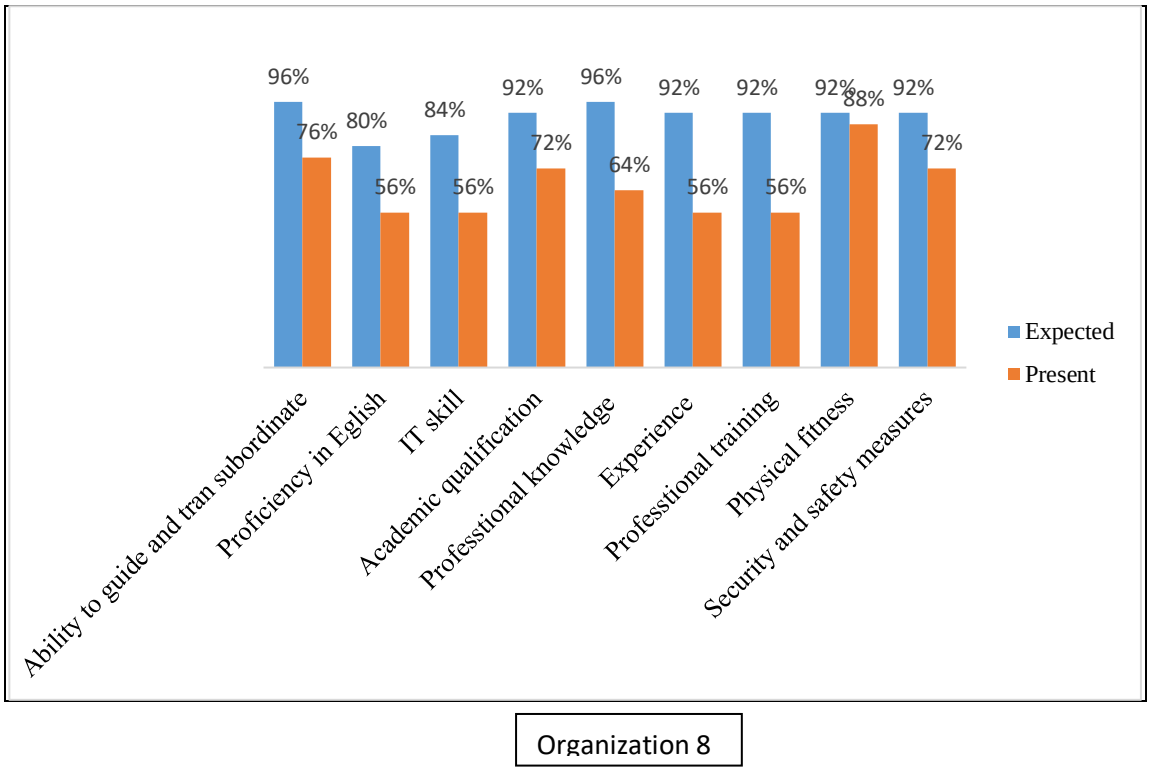


Fig. 3.8: Comparison between expected and present skills on 09 categories of technical skills for organization 8.

Figure 3.9 represents the comparison between expected skill (market demand) and present skill from the polytechnic graduates of Bangladesh 09 categories of technical skills for organization 9. It is seen from the figure that maximum (48%) skill gap for security and safety measures are found. It is also seen from the figure that minimum skill gap (30%) for physical fitness is found for this organization.

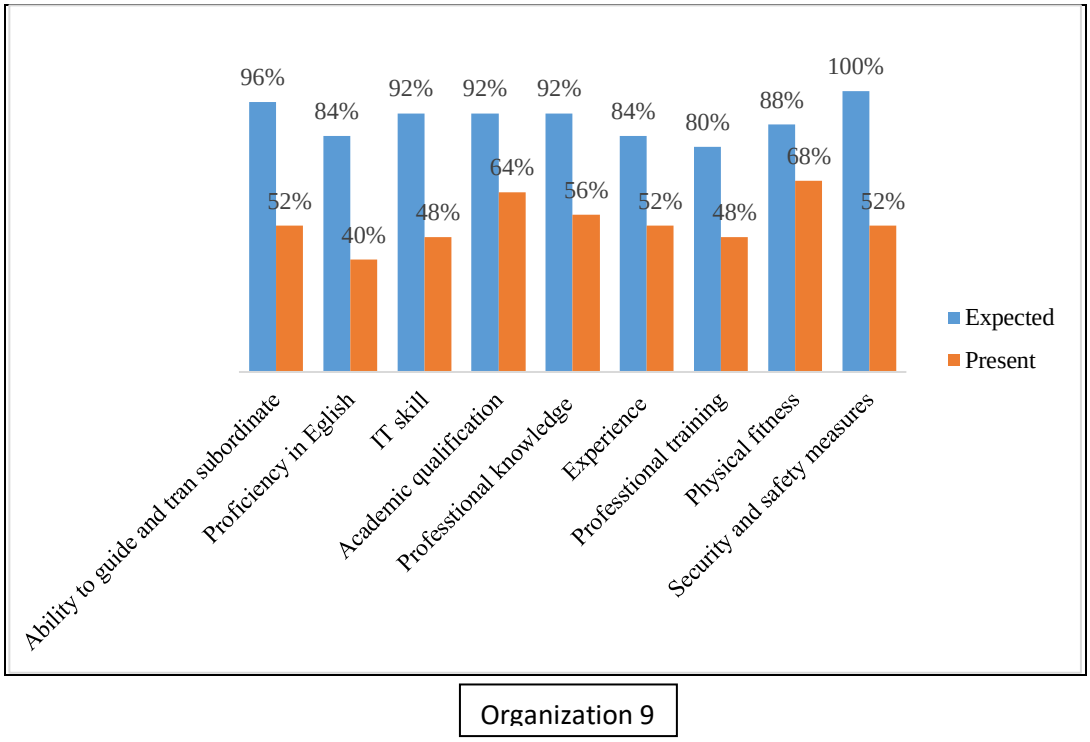


Fig. 3.9: Comparison between expected and present skills on 09 categories of technical skills for organization 9.

Figure 3.10 represents the opinion of 44 respondents of 09 renowned organizations of Bangladesh on 09 categories present level of technical skills of polytechnic graduates and required level of skills to perform job satisfactorily (market demand) for the same skills. Mean values of skill gap found from the evaluation of total numbers of respondents on 09 categories of technical skills have been presened in this figure.

After analyzing the data found from the survey questionnaires, 28% skill gap for ability to guide and train subordinate, 37% for proficiency in English, 27% for IT skill, 16% for academic qualification, 27% for professional knowledge, 25% for experience, 28% professional training, 12% physical fitness and 33% skill gap for security and safety measures have been found in this study. Maximum skill gap (37%) for proficiency in English and minimum skill gap (12%) for physical fitness presented in **Fig. 3.10** have been found from this study.

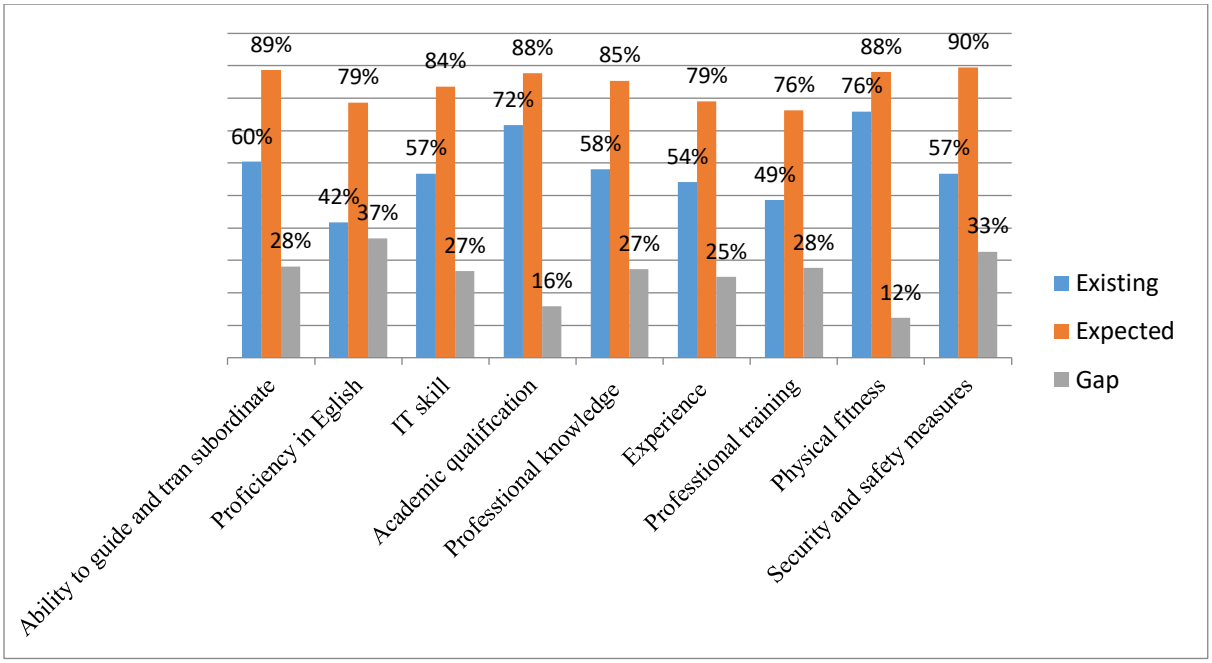


Fig. 3.10: Skill Gap analysis of polytechnic graduates in Bangladesh

3.11 Distribution of respondents based on their perception regarding competence of Polytechnic graduates in taking the challenges of modern job requirement.

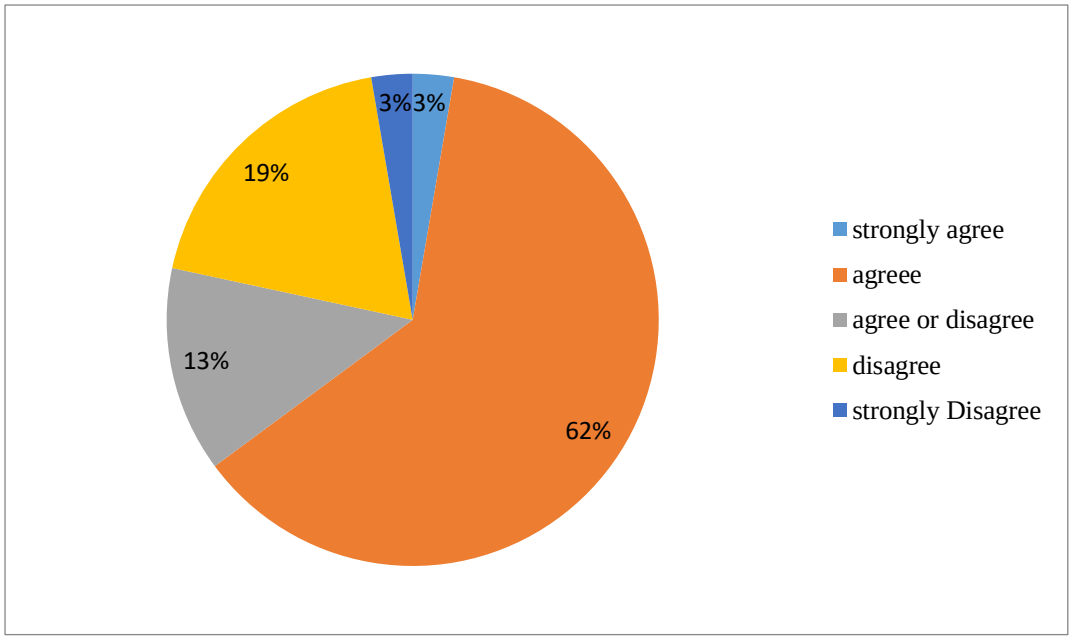


Fig. 3.11: Competency Level of polytechnic graduates for modern job market

On being asked whether the employers think that the graduates of polytechnic Institutes in Bangladesh are competent enough in taking challenges of modern job requirement, 62% agreed that the graduates are competent enough. However, 19% of the responding employers disagreed, 3% strongly agreed, 3% strongly disagreed and 13% remained neutral on this issue. Thus, the employer has not enough confidence on the potentials of the Polytechnic graduates of Bangladesh.

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Chapter 4
Conclusion and Recommendations

4.1 Conclusion

The findings of this study conclude that in Bangladesh there are large numbers of students are passing diploma engineering from polytechnic institutes every year. But a significant portion of them can not satisfy the job providing organizations due to their skill gap. As a result, the job providers fulfill their demand by migrant skill manpower. A significant amount of skill gap has been found from this study. This study shows the respondents have expressed their opinion that 28% skill gap for ability to guide and train subordinate, 37% for proficiency in English, 27% for IT skill, 16% for academic qualification, 27% for professional knowledge, 25% for experience, 28% professional training, 12% physical fitness and 33% skill gap for security and safety measures have been found. Maximum skill gap (37%) for proficiency in English and minimum skill gap (12%) for physical fitness have been found from this study. This study also shows that 62% respondents agreed, 3% of respondents strongly agreed and 19% disagreed on the issue of the polytechnic graduates are competent enough to meet the challenges of modern job market. In this regard, suggestions have been given from the employers to change syllabus and also the teaching methods by introducing case study and field work for the students, using latest available technology, and introducing skill and practical knowledge to meet the demand of the job market.

4.2 Recommendations

The recommendations to minimize the skill gap are as follows:

- Industry – Institute linkage should be strengthened.
- Have to arrange more industrial visit for students and teachers.
- Project based works have to be increased in polytechnic institutions.
- Quality of teachers should be ensured..
- Course structures have to be arranged on the basis of industrial requirements.
- Sufficient modern practical equipments have to be in laboratory.
- Proficiency in English have to be attained by the students.
- Industrial attachments have to be completed properly.
- All teachers must be familiar with the modern technology and manufacturing process.
- Rapid accesses of student and teachers in industry have to be established.

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Appendices

Appendix A: Questionnaire Form for the Assessment of Polytechnic Graduates Working in Your Organization/ Office

For the investigation

A Study on Identifying Gaps between the Employers Demand and Graduates Skill from the Polytechnic Institutes of Bangladesh

Identification and Consent

Good day to you! We are grateful for your time. Our names are ……. We are from …… Polytechnic Institute, Directorate of Technical Education to conduct research on **A Study on Identifying Gaps between the Employers Demand and Graduates Skill from the Polytechnic Institutes of Bangladesh**

This is a questionnaire which has been designed to get a clear view of the present skills of the diploma graduates of Bangladesh and expectation of the employers. The purpose of this study is to provide a view of the expectation gap between the employer and the present skills of diploma graduates from Polytechnic Institutes of Bangladesh.

Information that you share with us will be kept absolutely confidential and no one other than concerned people will have access to this information. The discussion should not carry any risks or discomfort for you, except your time taken to participate. We do hope that you will participate as your opinions and experiences are very important to us. However, you are free to choose whether or not to participate in the discussion. We will take 1 to 1.5 hours for the discussion. We also hope that you will feel comfortable to respond honestly and openly.

Name of the respondent:

Designation:

Organization:

Signature and Date:

Numbers of Polytechnic graduates are working in your organization

1. **Current level of Technical skills provided by Polytechnic graduates:**

1.1 How would you rate your diploma graduates in terms of following qualities? Please respond to the questions by indicating on a scale from 1~5 where your experience lies:

	Rating (5 for very good, 4 for good, 3 for average, 2 for below average, 1 for poor)
Ability to guide & train subordinates	
Proficiency in English	
IT skills	
Academic qualification	
Professional knowledge	
Experience	
Professional training	
Physical fitness	
Security & safety measures	
Others 1, please specify:	
Others 2, please specify:	

1.2. Bangladeshi Polytechnic graduates are competent enough to take the challenge of modern job requirement:- do you agree?

Strongly Agree	**Agree**	**Neither Agree nor Disagree**	**Disagree**	**Strongly Disagree**

1.3. Do you have any training facility for your employees?

- ☐ Yes
- ☐ No

1.4. Do you have any internship program in your firm for students?

- ☐ Yes
- ☐ No (If your answer is 'No', please go to question#11)

1.5. If yes, How many interns do you take every year?. . . . . .

1.6. What percentage of your employees were initially taken as intern?. . . . . .

1.7. On what basis do you select the interns? (Please tick appropriate items)

- ☐ Academic results
- ☐ Reputation of the university at which the student is studying.
- ☐ Reference
- ☐ Written test
- ☐ Interview
- ☐ Others 1 (Please specify):. . . . . .
- ☐ Others 2 (Please specify):. . . . . .

1.8. Is there any opportunity for the interns to be recruited in your firm after internship?

- ☐ Yes
- ☐ No

1.9. If you are asked to identify a single quality in a candidate for which you will hire him/her,

what would be that?. . . . . .

1.10. Do you give any preference to any diploma job seeker on the basis of "Home District"?

- ☐ Yes
- ☐ No

1.11. Which gender identity do you prefer while selecting diploma graduates?

- ☐ Male
- ☐ Female
- ☐ I don't discriminate

2. Technical skills required to perform at desired level (Market Demand)

2.1. To what extent do you think the following Technical skills are required for the diploma
graduates to perform at desired level?

Please respond to the questions by indicating on a scale from 1~5 where your experience lies:

	Rating (5 for very good, 4 for good, 3 for moderate, 2 for poor, 1 for very poor)
Ability to guide & train subordinates	
Proficiency in English	
IT skills	
Academic qualification	
Professional knowledge	
Experience	
Professional training	
Physical fitness	
Security & safety measures	
Others 1, please specify:	
Others 2, please specify:	

3. Skills Gap

(Please express your brief opinion regarding the following issues)

3.1. What are the main causes of skill Gap?

3.2. Do you think the Polytechnic Institutions are providing the right courses to make the diploma graduates competent enough to meet demand of job sectors?

☐ Yes

☐ No

3.3. If your answer is "No" for the above question, please suggest what the Polytechnic Institutions should do to make their graduates competent enough to meet the job market demand:

. . . . . .

3.4. What do you think need to be done to solve this problem by

(a) Government

(b) Educational Institutions

(c) Organizations/Industries

3.5. Are you willing to solve the problem of Technical skill gap? Please express your opinion.

3.6. Your opinion on Strengthening Industry- Institutions linkage.

Appendix A: Mean value of evaluations of respondents of 09 renowned organizations of Bangladesh.

Table 1. Mean value of evaluations of respondents of organization 1

Skills	Expected	Present
Ability to guide and train subordinate	88%	56%
Proficiency in English	80%	52%
IT skill	92%	64%
Academic qualification	80%	80%
Professional knowledge	100%	56%
Experience	76%	64%
Professional training	84%	60%
Physical fitness	92%	84%
Security and safety measures	96%	72%

Table 2. Mean value of evaluations of respondents of organization 2

Skills	Expected	Present
Ability to guide and train subordinate	76%	48%
Proficiency in English	76%	32%
IT skill	72%	36%
Academic qualification	80%	68%
Professional knowledge	72%	40%
Experience	64%	36%
Professional training	60%	48%
Physical fitness	84%	76%
Security and safety measures	72%	40%

Table 3. Mean value of evaluations of respondents of organization 3

Skills	Expected	Present
Ability to guide and train subordinate	84%	56%
Proficiency in English	72%	44%
IT skill	72%	48%
Academic qualification	80%	68%
Professional knowledge	80%	64%
Experience	72%	64%
Professional training	76%	52%
Physical fitness	72%	80%
Security and safety measures	84%	72%

Table 4. Mean value of evaluations of respondents of organization 4

Skills	Expected	Present
Ability to guide and train subordinate	68%	36%
Proficiency in English	64%	28%
IT skill	64%	32%
Academic qualification	80%	60%
Professional knowledge	72%	40%
Experience	64%	32%
Professional training	64%	28%
Physical fitness	64%	56%
Security and safety measures	80%	40%

Table 5. Mean value of evaluations of respondents of organization 5

Skills	Expected	Present
Ability to guide and train subordinate	92%	68%
Proficiency in English	80%	44%
IT skill	80%	80%
Academic qualification	92%	60%
Professional knowledge	88%	48%
Experience	84%	64%
Professional training	64%	28%
Physical fitness	96%	60%
Security and safety measures	68%	24%

Table 6. Mean value of evaluations of respondents of organization 6

Skills	Expected	Present
Ability to guide and train subordinate	96%	68%
Proficiency in English	72%	36%
IT skill	84%	68%
Academic qualification	84%	84%
Professional knowledge	76%	60%
Experience	60%	40%
Professional training	60%	44%
Physical fitness	84%	72%
Security and safety measures	88%	64%

Table 7. Mean value of evaluations of respondents of organization 7

Skills	Expected	Present
Ability to guide and train subordinate	84%	56%
Proficiency in English	80%	32%
IT skill	96%	56%
Academic qualification	92%	76%
Professional knowledge	80%	60%
Experience	80%	56%
Professional training	88%	44%
Physical fitness	92%	84%
Security and safety measures	100%	52%

Table 8. Mean value of evaluations of respondents of organization 8

Skills	Expected	Present
Ability to guide and train subordinate	96%	76%
Proficiency in English	80%	56%
IT skill	84%	56%
Academic qualification	92%	72%
Professional knowledge	96%	64%
Experience	92%	56%
Professional training	92%	56%
Physical fitness	92%	88%
Security and safety measures	92%	72%

Table 9. Mean value of evaluations of respondents of organization 9

Skills	Expected	Present
Ability to guide and train subordinate	96%	52%
Proficiency in English	84%	40%
IT skill	92%	48%
Academic qualification	92%	64%
Professional knowledge	92%	56%
Experience	84%	52%
Professional training	80%	48%
Physical fitness	88%	68%
Security and safety measures	100%	52%

Appendix B: SPSS analysis on Present Technical Skills of Polytechnic Graduates of Bangladesh

Table 10. Ability to guide and train subordinate

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below Average	12	27.3	27.3	27.3
	Average	19	43.2	43.2	70.5
	Good	13	29.5	29.5	100.0
	Total	44	100.0	100.0	

Table 11. Proficiency in English

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	5	11.4	11.4	11.4
	Below Average	30	68.2	68.2	79.5
	Average	9	20.5	20.5	100.0
	Total	44	100.0	100.0	

Table 12. IT Skills

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	1	2.3	2.3	2.3
	Below Average	15	34.1	34.1	36.4
	Average	18	40.9	40.9	77.3
	Good	10	22.7	22.7	100.0
	Total	44	100.0	100.0	

Table 13. Academic Qualification

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below Average	2	4.5	4.5	4.5
	Average	15	34.1	34.1	38.6
	Good	26	59.1	59.1	97.7
	Very good	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

Table 14. Professional Knowledge

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	1	2.3	2.3	2.3
	Below Average	12	27.3	27.3	29.5
	Average	21	47.7	47.7	77.3
	Good	10	22.7	22.7	100.0
	Total	44	100.0	100.0	

Table 15. Experience

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	3	6.8	6.8	6.8
	Below Average	15	34.1	34.1	40.9
	Average	18	40.9	40.9	81.8
	Good	8	18.2	18.2	100.0
	Total	44	100.0	100.0	

Table 16. Professional Training

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	7	15.9	15.9	15.9
	Below Average	18	40.9	40.9	56.8
	Average	13	29.5	29.5	86.4
	Good	5	11.4	11.4	97.7
	Very good	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

Table 17. Physical Fitness

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below Average	1	2.3	2.3	2.3
	Average	15	34.1	34.1	36.4
	Good	20	45.5	45.5	81.8
	Very good	8	18.2	18.2	100.0
	Total	44	100.0	100.0	

Table 18. Security and safety measures

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	7	15.9	15.9	15.9
	Below Average	7	15.9	15.9	31.8
	Average	17	38.6	38.6	70.5
	Good	12	27.3	27.3	97.7
	Very good	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

Appendix C: SPSS Analysis on Expected Technical Skills from the Job Market for Polytechnic Graduates of Bangladesh.

Table 19. Ability to guide and train subordinate

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	average	1	2.3	2.3	2.3
	good	23	52.3	52.3	54.5
	very good	20	45.5	45.5	100.0
	Total	44	100.0	100.0	

Table 20. Proficiency in English

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	below average	1	2.3	2.3	2.3
	average	6	13.6	13.6	15.9
	good	32	72.7	72.7	88.6
	very good	5	11.4	11.4	100.0
	Total	44	100.0	100.0	

Table 21. IT Skills

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	average	7	15.9	15.9	15.9
	good	22	50.0	50.0	65.9
	very good	15	34.1	34.1	100.0
	Total	44	100.0	100.0	

Table 22. Academic Qualification

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	average	1	2.3	2.3	2.3
	good	25	56.8	56.8	59.1
	very good	18	40.9	40.9	100.0
	Total	44	100.0	100.0	

Table 23. Professional Knowledge

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	average	5	11.4	11.4	11.4
	good	22	50.0	50.0	61.4
	very good	17	38.6	38.6	100.0
	Total	44	100.0	100.0	

Table 24. Experience

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	poor	1	2.3	2.3	2.3
	average	7	15.9	15.9	18.2
	good	28	63.6	63.6	81.8
	very good	8	18.2	18.2	100.0
	Total	44	100.0	100.0	

Table 25. Professional Training

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	below average	2	4.5	4.5	4.5
	average	12	27.3	27.3	31.8
	good	22	50.0	50.0	81.8
	very good	8	18.2	18.2	100.0
	Total	44	100.0	100.0	

Table 26. Physical Fitness

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	average	3	6.8	6.8	6.8
	good	20	45.5	45.5	52.3
	very good	21	47.7	47.7	100.0
	Total	44	100.0	100.0	

Table 27. Security and Safety Measures

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	average	5	11.4	11.4	11.4
	good	13	29.5	29.5	40.9
	very good	26	59.1	59.1	100.0
	Total	44	100.0	100.0	

Table 28. Competency level of Polytechnic Graduate to meet demand of modern job market.

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly agree	1	2.3	2.7	2.7
	Agree	23	52.3	62.2	64.9
	Agree or Disagree	5	11.4	13.5	78.4
	Disagree	7	15.9	18.9	97.3
	Strongly Disagree	1	2.3	2.7	100.0
	Total	37	84.1	100.0	
Missing	System	7	15.9		
Total		44	100.0		

Table 29. Training facility of employee in organizations.

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	36	81.8	97.3	97.3
	No	1	2.3	2.7	100.0
	Total	37	84.1	100.0	
Missing	System	7	15.9		
Total		44	100.0		

Table 30. Internship facility for Polytechnic students in organizations

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	19	43.2	51.4	51.4
	No	18	40.9	48.6	100.0
	Total	37	84.1	100.0	
Missing	System	7	15.9		
Total		44	100.0		

Table 31. Job facility on the basis of Home District in Organizations

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	18.2	26.7	26.7
	No	22	50.0	73.3	100.0
	Total	30	68.2	100.0	
Missing	System	14	31.8		
Total		44	100.0		

Table 32. Job Facility on the basis of Gender

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
	Male	11	25.0	30.6	30.6
Valid	All	25	56.8	69.4	100.0
	Total	36	81.8	100.0	
Missing	System	8	18.2		
Total		44	100.0		

Table 33. Opinion on solving skill gap problem by the government

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
	Yes	8	18.2	25.8	25.8
Valid	No	23	52.3	74.2	100.0
	Total	31	70.5	100.0	
Missing	System	13	29.5		
Total		44	100.0		

Table 34. Opinion on solving skill gap problem by the Educational Institutions

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
	Yes	29	65.9	93.5	93.5
Valid	No	2	4.5	6.5	100.0
	Total	31	70.5	100.0	
Missing	System	13	29.5		
Total		44	100.0		

Table 35. Opinion on solving skill gap problem by the Organization/Industries

Comments		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	20.5	31.0	31.0
	No	19	43.2	65.5	96.6
	3	1	2.3	3.4	100.0
	Total	29	65.9	100.0	
Missing	System	15	34.1		
Total		44	100.0		