

A Brief Report on Satisfaction Survey 2016 Higher Education Quality Enhancement Project (HEQEP)

1. Introduction

Higher education is an important factor to national economics both as an industry, in its own right, and as a source of trained and educated personnel for the rest of the economy of a country.

The UN International Covenant on Economic, Social and Cultural Rights of 1966 declares, in Article 13, that “higher education shall be made equally accessible to all on the basis of capacity, by every appropriate means, and in particular by the progressive introduction of free education.

Because a significant portion of the output of university education turns out as the major input in the teaching profession of both secondary and primary education sub-sectors in hierarchical succession the enhancement of quality education becomes a crying need for post-secondary or higher education sub-sector too. The issue needs to be viewed in the light of a holistic approach of bringing in improvement of quality in the entire education system of the country.

Over the decade several development initiatives were undertaken by the Government of Bangladesh (GoB) in both the primary and secondary education sub-sectors that resulted in visible change in access to schooling and quality education in schools. The efforts have still been going on to strengthen capacity building in schools alongside improving teaching-learning environment in these sub-sectors for further enhancing quality of education. This has obviated the government to take up the Higher Education Quality Enhancement Project (HEQEP) in 2009-2010 under direct supervision of the University Grant Commission (UGC) with financial assistance from the World Bank.

The aim of this project is to improve the quality and relevance of teaching-learning and research environment in higher education through encouraging innovation within universities and by enhancing the technical and institutional capacity of the higher education sector. This project, however, does not include the tertiary educational institutes / colleges under the National University.

2. Objectives of the project

The main objectives of the project are:

- (i) To improve quality of teaching-learning and research capabilities of the tertiary educational institutions;
- (ii) To encourage both innovation and accountability of the tertiary educational institutions;
- (iii) To enhance the technical and institutional capacity of the higher education sector of the country;

It is expected that efficient utilization of the Academic Innovation Fund (AIF) of this project would promote changes in organizational behavior, professional attitudes and institutional culture in addition to creating opportunities for university faculty members to pursue ambitions, to experiment innovative ideas and to test possible solutions.

3. Objectives of this assignment

The main purpose of this assignment is to carry out a Follow-up Satisfaction Survey (FSS) based on feedback obtained from a similar type of survey conducted earlier. The pre-set objectives of the FSS are given as:

- i. Perception of stakeholders regarding changes occurred in respect of learning environment, teaching-learning quality and research standard;
- ii. Lessons learned from utilization process of the AIF by differential subproject management;
- iii. Track change in satisfaction of stakeholders from success and failure stories of the initiatives; and
- iv. Identification of further needs and areas for improving overall satisfaction and retention.

4. The follow-up satisfaction survey (FSS)

Providing support to universities from the AIF began in May 2010. Up-till the time of starting this FSS, proposals of a total of 332 sub-projects were approved through a competitive process of selection of proposals and given necessary support from AIF. These sub-projects comprise of 91 in the first Round, 106 in the second Round and 135 in the third round. Majority of the sub-projects of the first round reportedly got completed long ago while many of the sub-projects in the 2nd round that began in June 2011 were nearing completion before starting of this assignment. Thereby, the sub-projects of Rounds 1 and 2 have been brought under the FSS. Because the 135 sub-projects under round-3 have just started utilizing the AIF and hence these are kept outside this survey study.

4.1 Survey process

The survey involved collection of information and data from both primary and secondary sources. The primary data were collected through field survey while the secondary data from desk study.

The field survey consists of ways:

- (i) Quantitative process of data collection;
- (ii) Qualitative process of data collection.

4.2 Respondent category

The main two categories of respondents for field survey are:

- (i) The **study group**, those belonging to the **beneficiary departments** i.e supported by the HEQEP. Hence the respondents are: (a) Students, (b) University Teachers, (c) Department Heads/SPMs and (e) Employers.
- (ii) The **control group**, those belonging to **Non-beneficiary Departments** of Universities i.e. not-supported by the HEQEP. Hence in this case the respondents are (a) Students, (b) University Teachers, and (c) Departmental / institutional Heads.

4.3 Sample size

The **study group** involved collection of data from randomly selected 60 Departments / Institutes of 26 universities (including 2 private universities) covering 13 different districts under seven (7) administrative Divisions. The total number of responded Beneficiary Students, Departmental Heads and Faculty Members from the beneficiary Departments are 4405, 54 and 369 respectively. Besides, data were collected from 16 key informants who are mostly SPMs and 76 employers (vide Tble-1).

Table-1: Summary of quantitative data from beneficiary respondents by category

Sl. No.	Respondents Category	Instrument Type	Sample			Remarks
			Targeted	Responded / Reacted (no.)	Response Rate (per cent)	
1	Departmental Students	Set-1A	4800	4405	92 per cent	Response rate <100per cent i.e reduced due to non-availability of or not giving time by respondents.
2	Departmental Head	Set-2A	60	54	90 per cent	
3	Departmental Faculty Members	Set-3A	480	369	77 per cent	
4	Employer	Set-4	100	76	76 per cent	

On the contrary, the control group involved in data collection from randomly selected 37 departments / Institutes of 12 universities spreading over 7 districts under five (5) administrative divisions. The total number of responded Non-beneficiary Students, Departmental Heads, Faculty Members are 1438, 37 and 123 respectively (vide Table-2).

Table-2: Summary of quantitative data from non-beneficiary respondents by category

Sl. No.	Respondents Category	Instrument Type	Sample			Remarks
			Targeted	Responded / Reacted (no.)	Response Rate (per cent)	
1	Departmental Students	Set-1B	1600	1438	89 per cent	A number of faculty members not showed interest in giving response.
2	Departmental Head	Set-2B	40	37	92 per cent	
3	Departmental Faculty Members	Set-3B	160	123	77 per cent	

4.4 Data collection instruments

Five different sets of study tools were developed and used subsequently for collecting field data from study group respondents and three different sets of study tools for the control group respondents as given below:

For study Group:

- Questionnaire for beneficiary students
- Interview schedule for beneficiary departmental / institutional Heads
- Questionnaire for beneficiary faculty members
- Interview schedule for key informants
- Questionnaire for employers

For control Group:

- Questionnaire for non-beneficiary students
- Interview schedule for non-beneficiary departmental / institutional Heads
- Questionnaire for non-beneficiary faculty members

4.5 Data collection and data processing

Field data were collected from the sample departments during the period from 28.02.2016 to 24.03.2016. The time span was extended later by two more weeks due to some unavoidable circumstances as mentioned in the study limitations. As many as 20 Field Investigators and 4 supervisors were engaged for data collection and overall supervision of the activities under strict guidance of the study team.

Collected data for both study group and control group of respondents were entered into the computer system. After a long process of editing, coding, cleaning and processing the resultant data have been analyzed using the SPSS and STATA Software systems.

5. Findings

5.1 Students' socio-economic information and opinion

Responses of a total of 4274 **beneficiary students** were found valid. They comprise of 49.8% from general University, 29.5% from Engineering University, 17.8% from Agricultural University and only 2.9% from Medical University as reflected in Figure-1 below:

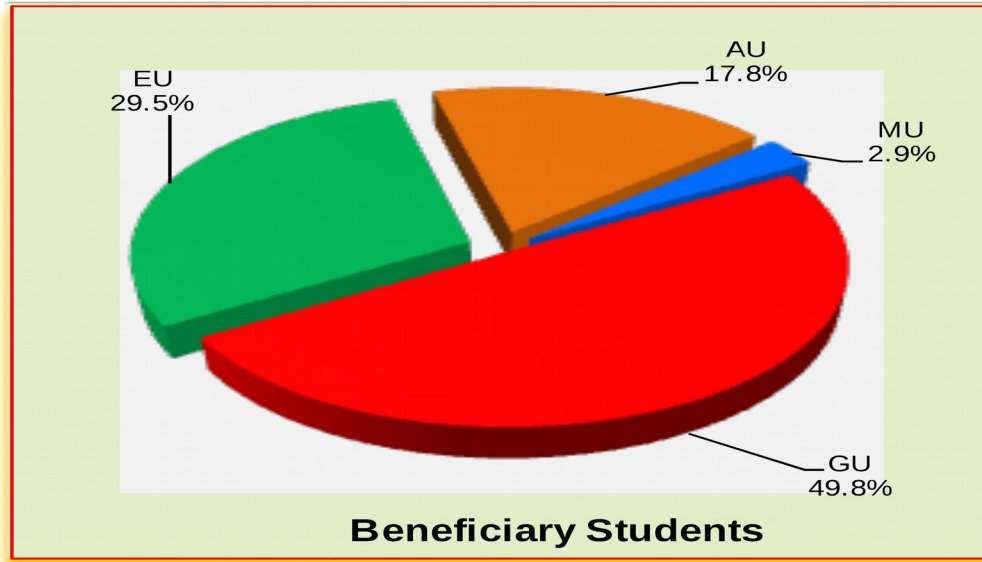


Figure-1: Graphical illustration of beneficiary student respondents by university category

Among the total 4274 valid respondents 66.6% were male students while 33.4% represented the female beneficiary students (vide Figure-2).

On the contrary, the **control group** students representing the **non-beneficiary** respondents consists of 68.3% male students and 31.7% female students drawn from 12 universities belong to three categories (1. General University, 2. Engineering University and 3. Agricultural university).

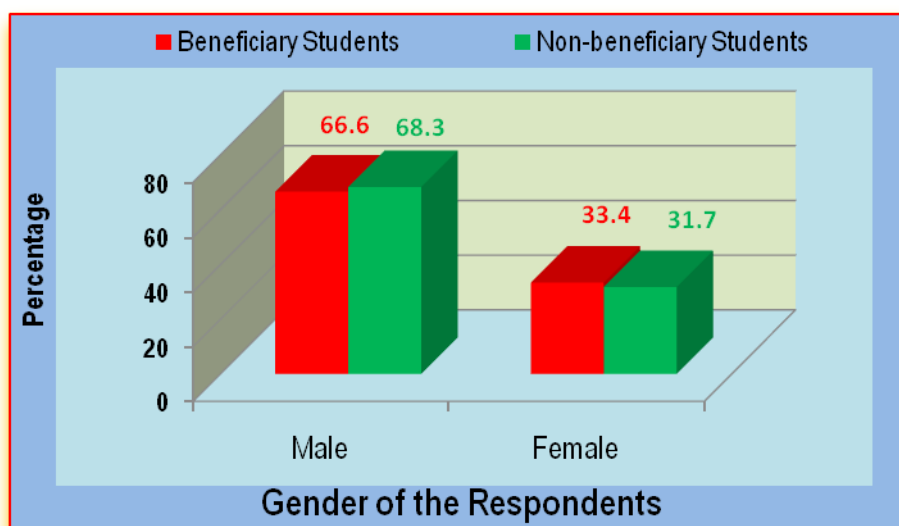


Figure-2: Beneficiary and non-beneficiary students by Gender

Beneficiary male students (66.6%) appear to be less enthusiastic in attending the satisfaction survey compared to their (68.3%) male counterparts of the non-beneficiary departments. The trend looks opposite in case of female respondents which shows that beneficiary female respondents (33.4%) represent slightly over their female non-beneficiary counterpart students (31.7%).

Among the 4274 valid beneficiary student respondents 76.84% were drawn from undergraduate courses. On the other hand 71.84% of, the non-beneficiary student respondents belong to undergraduate courses. Education level of different categories of respondents can be viewed in Table-3.

Table 3: Beneficiary and non-beneficiary students by level of education

Level of education	Beneficiary students		Non-beneficiary students	
	Number	per cent	Number	per cent
Undergraduate	3284	76.84	1033	71.84
Post-graduate	990	23.16	405	28.16
Total	4274	100	1438	100

More explicit presentation on comparative differences between responding beneficiary and non-beneficiary students studying at different level of academic programs in the higher education can be seen in Figure-3 below:

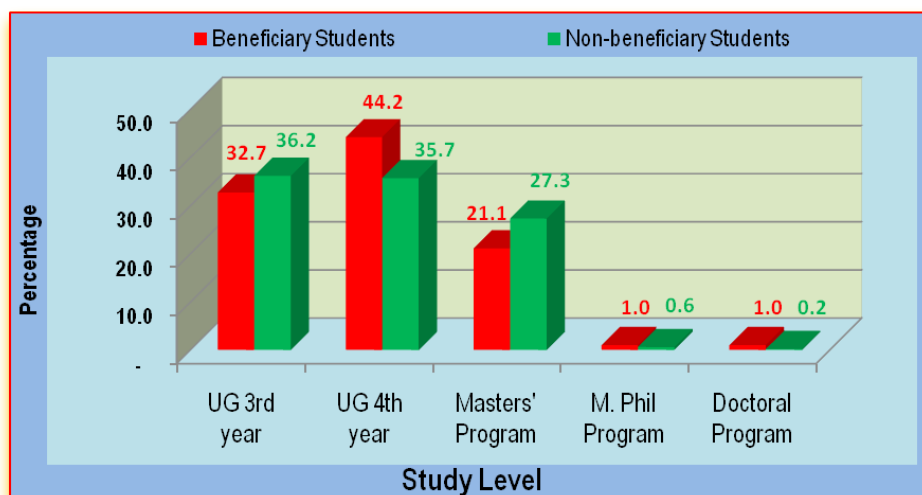


Figure-3: Beneficiary and non-beneficiary students by current year of study at different level in the department/institute

Among the beneficiary respondents who participated in the opinion poll 44.2% of them belonged to 4th year undergraduate class while only 1% of them were from doctoral program. But for non-beneficiary (control group) participants the 3rd year undergraduate students appeared to be the highest 36.2% followed by 35.7% 4th year undergraduate students. Only 0.2% of the non-beneficiary students belonged to the doctoral program as depicted in Fig-3.

Prior study location of students

Majority (46.8%) of the beneficiary students completed their last degree from institutions located in the divisional headquarters (HQs) and those (13.5%) hailed from the rural area registered the smallest group of beneficiary students.

Similarly, the large majority (44.1%) of the non-beneficiary students completed their last degree from institutions located in the divisional HQs and those (16%) came from the rural area form the smallest group of non-beneficiary students, vide Fig-4.

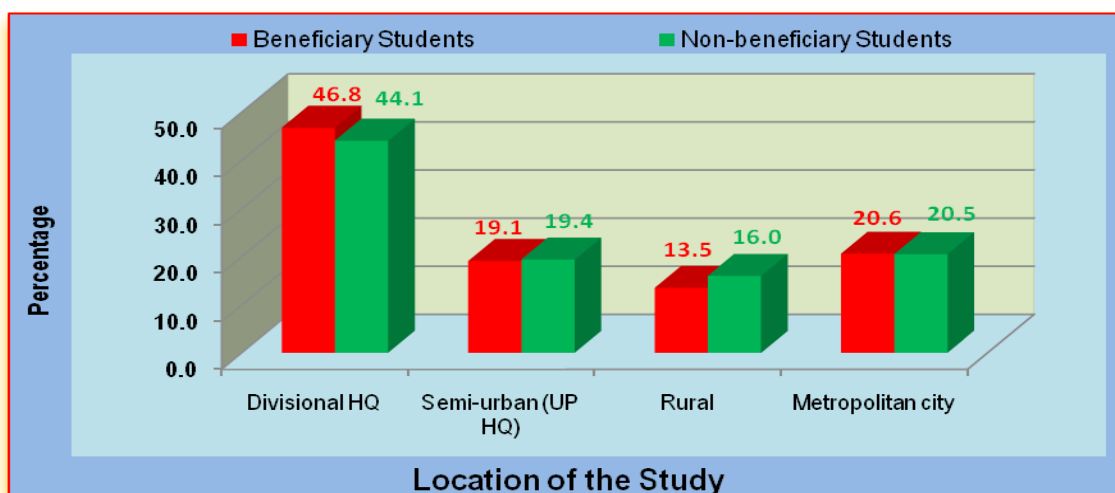


Fig-4: Beneficiary and non-beneficiary students by location of study prior to university admission

Student's family income:

Highest number (48.2%) of **beneficiary students** indicated their parents'/guardians' monthly income fall within Tk. 20,000/- to Tk.50,000/- while a significant fraction (36.2%) of them showed that as below Tk. 20,000/- per month and only a few (3.1%) of them mentioned that @Tk.100,000/- or above per month.

Among **non-beneficiary students** 51.5% of their parents / guardians earn within Tk. 20,000/- Tk.50,000/- per month followed by 37.5% of them having that less than Tk.20,000/- per month. Only 1.8% of students' parents / guardians have monthly income of Tk. 100,000/- or above. The differences in income is summarized in Table-4.

Table-4: Beneficiary and non-beneficiary students by monthly income of father

Monthly income	Beneficiary students		Non-beneficiary students	
	Number	per cent	Number	per cent
Less than Tk. 20,000	1533	36.2	536	37.5
Tk. 20,000-50,000	2039	48.2	736	51.5
Tk. 50,000-1,00,000	530	12.5	131	9.2
Tk. 1,00,000 & above	132	3.1	25	1.8
Total	4234	100	1428	100

5.2 Students' opinion on learning environment:

On an average, in all the 5 (five) intervention areas under **learning environment of department / institute** in University the opinions of the beneficiary students show a modest increasing trend in the level of satisfaction over their non-beneficiary counterparts (vide Figure-5).

In all the 5 (five) areas of AIF supports enhancing for Departmental / Institutional Learning Environment beginning from technologies or facilities in classrooms to organizing seminars and workshops the beneficiary students indicated an appreciable level of improvement compared to those were available in their own departments before HEQEP intervention.

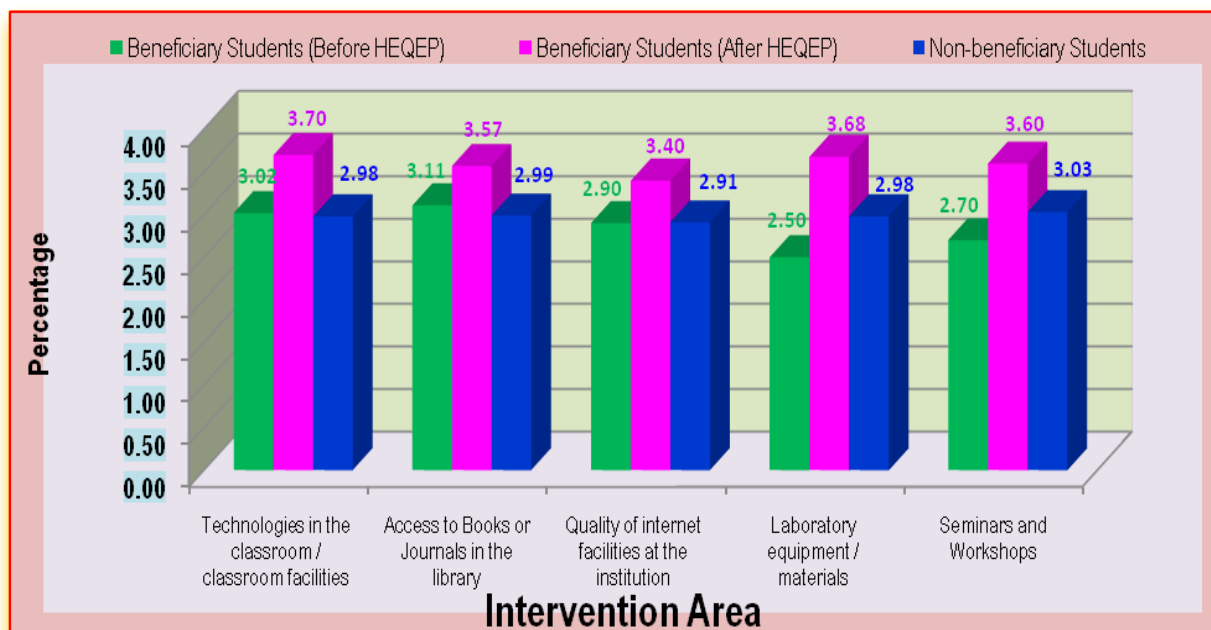


Figure-5 Change in Departmental / Institutional Learning Environment due to HEQEP Intervention as rated by Beneficiary and Non-beneficiary Students

Beneficiary students also appeared to have differed with their teachers in respect of satisfaction over prevailing standard of teaching and learning environment in own department / institute. The average level of satisfaction indicated by the responding faculty members appear to be 3.62 which is a little higher than that (i.e. 3.59) of their students. This means both beneficiary teachers and beneficiary students showed somewhat close consensus in expressing their respective view about HEQEP intervention in the area of teaching and learning environment in their own department / institutes. Comparative satisfaction levels in this respect can be viewed in Table-5:

Table-5: Comparison of satisfaction on teaching and learning environment as viewed by beneficiary students and faculty members

Output Indicators		Satisfaction Value		Difference in Satisfaction Value ($\bar{x}_1 - \bar{x}_2$)	Satisfaction Index (ASI)		Difference in Satisfaction Index ($(SI)_2 - (SI)_1$) (+)(-)	Inference
Ref No.	Indicative Area / Statement	Beneficiary Students (\bar{x}_2)	Beneficiary Teachers (\bar{x}_1)		Beneficiary Students ($(SI)_1$)	Beneficiary Teachers ($(SI)_2$)		
1	2	3	4	5	6	7	8	9
2.1	Technologies in the classroom facilities (2*)	3.7	3.92	0.22	0.68	0.73	(+)0.05	- Marginal difference in the level of satisfaction as supported by SIs on indicative item. - Both beneficiary teachers and students expressed an increase in satisfaction on teaching and learning environment in the own departments. They showed almost in close agreement in each level of satisfaction
2.2	Access to Books or Journals in the Library (3*)	3.57	3.66	0.09	0.64	0.67	(+)0.03	
2.3	Quality of Internet facilities at the Institution (4*)	3.40	3.39	(-)0.01	0.60	0.60	(+)0.00	
2.4	Laboratory Equipment / Materials (5*)	3.68	3.34	(-)0.34	0.67	0.59	(-)0.08	
2.5	Seminars and workshop (3*)	3.60	3.80	0.20	0.65	0.70	(+)0.05	
	Average	3.59	3.62	0.03	0.65	0.66	(+)0.01	

5.3 Students' opinion on developing knowledge and skills:

Though there appears to have some differences in respect of teaching learning, industry interactions and support services the average value of **importance** level and **satisfaction** level on **developing knowledge and skills** in own department / institute as expressed by the **beneficiary students** are 3.60 and 3.63 respectively. This indicates that the level of importance given by **beneficiary students** and level of satisfaction shown by them match well. On the contrary, the **control group** (non-beneficiary) students have set the indicative areas of statements on knowledge and skills in own department to higher level of importance ranging from 3.80 to 3.92 the average of which being 3.88. The satisfaction level on the other hand in those areas also differ slightly from each other and average satisfaction level expressed by the **non-beneficiary** students is 3.15. The average differences in respect of satisfaction value between the two groups of respondents is 0.48 that means more than 15.2%.

5.4 Overall Satisfaction

The beneficiary students expressed level of satisfaction from their overall perception about HEQEP intervention in their own departments / institutes. Regarding learning environment and teaching-learning quality they rated their overall and collective satisfaction as 3.84 (vide table-5). This value of overall satisfaction (i.e 3.84) on enhancement of quality education of beneficiary departments looks higher than that (3.77) is recorded in Table-1 (page-3) of the Joint Interim Impact Assessment Study (IIAS) report.

Contrarily, the sample **non-beneficiary students'** overall satisfaction level about their own departmental teaching learning quality appeared to be 3.46. The difference between the opinions of the two sets of students in respect of their overall satisfaction regarding teaching and learning quality in own departments / institutes is shown in Table-6 below.

Table-6 Difference in overall satisfaction about quality of teaching and learning in own department as rated by students (beneficiary & non-beneficiary)

Outcome Indicators		Satisfaction Value (S.V)		Difference in Weighted Mean Score	Overall Satisfaction Index (S.I.)		Difference in Index of Satisfaction	Inference
Ref. No.	Imparting Quality Education	Study Group \bar{x}_2	Control Group \bar{x}_1	$(\bar{x}_2 - \bar{x}_1)$	Study Group (SI) ₂	Control Group (SI) ₁	(SI) ₂ - (SI) ₁	
1	2	3	4	5	6	7	8	9
3.5	Overall, I am satisfied with the quality of teaching & learning at our department	3.84	3.46	0.38	0.71	0.62	0.09	Difference in satisfaction values and index indices reflect positive influence of HEQEP intervention.
<p>Note: 1. Ref. No. 3.5 means the outcome indicator used for measuring the overall satisfaction of students as stated in section-3 of the students' Questionnaires (annex 5-1A & B)</p>								

This difference in the level of overall satisfaction between the two groups of respondents appears to be significant for taking decision for extending HEQEP intervention to the non-beneficiary departments.

About getting the kind of job after graduation the **beneficiary students'** expectation level (3.83) appears to be higher than that (3.50) of the **non-beneficiary students**. Similarly, about prospects of entering the job market after graduation **beneficiary students'** expectation also stands at higher level (3.85) than that (3.51) of the sample **non-beneficiary students**.

Beneficiary students appreciated positive the roles of HEQEP in enhancing quality in learning environment of the University Department as well as developing knowledge and skill of students.

Both **beneficiary** and **non-beneficiary** groups students stressed the need for continued support from HEQEP and its prolongation for making sustainable development of quality in the higher education subsector.

6. Information and Opinions from Departments

6.1 Rank and degree of Head of the Department

The satisfaction survey has gathered facts about teaching strengths of the respective departments. A beneficiary department usually has an average of 23 teachers maximum being 70 and minimum 5. The department has an average of 11 Ph.D. holders, the maximum being 45 and minimum one. The faculty strength is highest in Agricultural Universities (maximum 70 teachers) followed by General Universities (maximum 57 teachers), Medical University (maximum 38 teachers) and Engineering Universities (maximum 35 teachers). In respect of Ph.D. holders Agricultural Universities have highest number of Ph.D. holders per department (maximum 45 Ph.D. holders), followed by General Universities (maximum 32 Ph.D. holders), Engineering Universities (maximum 19 Ph.D. holders) and Medical University (maximum 7 Ph.D. holders). Figure-6 gives an insight into average number of Professors and Ph.D. degree holders in different categories of universities covered by this study.

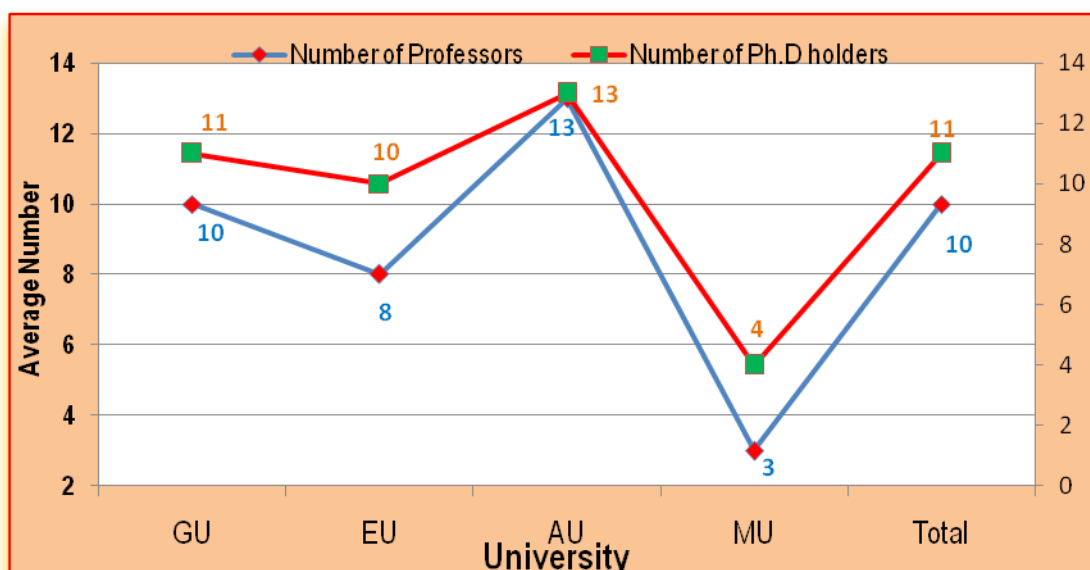


Fig-6: Average number of Professors and Ph.D. Degree holders among Faculty Members of Beneficiary Departments

6.2 Opinion of Heads of the Department

The satisfaction survey has taken opinion on their level of satisfaction with the different types of supports extended by HEQEP project. The support items have been divided into the following ten groups: (1) Computer, (2) Printing Photocopier, (3) Books and Journals, (4) Lab facilities, (5) Multimedia Projectors, (6) Training Workshop / Seminar, (7) Internet facilities, (8) Infrastructure, (9) Equipment, (10) Research related equipment

The Heads of the Departments of Medical University have expressed highest level of satisfaction (satisfaction level 5) with the types of support items they received from HEQEP. Among the remaining three groups of Heads of Departments as in Agricultural Universities indicate the highest level of satisfaction (satisfaction level 4.72) about all types of support items they received from HEQEP. However, they expressed highest level of satisfaction 5 for printers / photocopiers, training, workshop and seminars, equipment and research related supports. In the Engineering Universities the Department Heads expressed highest level of satisfaction (satisfaction level 4.8) with internet facilities and training workshop and seminars (satisfaction level 4.7). In the General Universities the Department Heads have expressed highest level of satisfaction (satisfaction level 5) for Electrical and Electromechanical equipment support and for multimedia projectors (satisfaction level 4.8) vide Tables-7 and 8.

Table-7: Comparative satisfaction level of beneficiary departmental heads by university category

SI No.	Items received from HEQEP	General Universities		Engineering Universities		Agricultural Universities		Medical Universities		All Universities
		Satisfaction Level	Satisfaction Index	Satisfaction Level	Satisfaction Index	Satisfaction Level	Satisfaction Index	Satisfaction Level	Satisfaction Index	
1.	Computer	4.3	0.82	4.0	0.75	4.0	0.75			4.1
2.	Printer Photocopier	3.5	0.63	4.6	0.90	5.0	1.0			4.4
3.	Books and Journals	4.4	0.85	4.1	0.78	4.8	0.95			4.4
4.	Lab facilities	4.2	0.80	4.0	0.75	4.7	0.93	5.0	1.0	4.5
5.	Multimedia Projectors	4.8	0.95	3.8	0.70	4.5	0.88			4.4
6.	Training/ Workshop / Seminar	4.7	0.93	4.7	0.93	5.0	1.0			4.8
7.	Internet facilities	4.6	0.90	4.8	0.95	4.5	0.88			4.6
8.	Infrastructure	4.4	0.85	4.5	0.88	4.7	0.93			4.5
9	Electric and Electromechanical Equipment	5.0	1.0	4.3	0.83	5.0	1.0			4.8
10.	Research related equipment	4.5	0.88	4.3	0.83	5.0	1.0	5.0	1.0	4.7
Average		4.44	0.87	4.31	0.83	4.72	0.93	5.0	1.0	4.5

Table-8: Comparative importance level of non-beneficiary departmental heads by category

SI No.	Items desired from HEQEP support	General Universities		Engineering Universities		Agricultural Universities		All universities	
		Importance Level	Importance Index	Importance Level	Importance Index	Importance Level	Importance Index	Importance level	Importance index
1.	Computer	4.8	0.95	4.4	0.85	4.0	0.75	4.4	
2.	Printing Photocopier	4.5	0.88	4.0	0.75	4.8	0.95	4.4	
3.	Books and Journals	5.0	1.0	3.5	0.63	5.0	1.0	4.5	
4.	Lab facilities	5.0	1.0	4.5	0.88	4.6	0.90	4.7	
5.	Multimedia Projectors	4.8	0.95	4.0	0.75	4.7	0.93	4.5	
6.	Training Workshop / Seminar	5.0	1.0	5.0	1.0	5.0	1.0	5.0	
7.	Internet facilities	3.6	0.65	5.0	1.0	3.0	0.50	3.9	
8.	Infrastructure	4.5	0.88	4.0	0.75	4.5	0.88	4.3	
9	Equipment	4.0	0.75	3.0	0.50	5.0	1.0	4.0	
10.	Research related equipment	4.8	0.95	0.0	0.0	4.5	0.88	3.3	
Average		4.6	0.90	3.74	0.71	4.51	0.88	4.3	

6.3 Faculty Members' Opinion

The faculty members have expressed their level of satisfaction to the elements of support given from HEQEP given to improve teaching and learning environment in the beneficiary departments of the universities. They also appreciated HEQEP's assistance for them to become effective and high quality teacher and researcher. The support elements have been divided into following five broad groups:

- Technologies in the class room/class room facilities
- Access to Books or Journals in the library
- Quality of Internet facilities at the institution
- Laboratory equipment/materials
- Research work, national and international seminar, workshop

The level of satisfaction that the faculty members have expressed ranges from 3.34 to 3.92. This situation level is much higher than that they experienced the situation before HEQEP which ranges from 2.37 to 2.68.

The faculty members have also expressed a satisfaction level of 3.92 for the HEQEP support items "Technologies in the classroom / classroom facilities" which was 2.47 before HEQEP. In

their opinion level of satisfaction with the item “Access to Books or Journals was 2.68 before HEQEP. The level of satisfaction to the item “Quality of Internet facilities” has been 3.39 which was 2.37 before HEQEP. The level of satisfaction to the item “Laboratory equipment / materials” has been 3.34 which was 2.40 before HEQEP support. The level of satisfaction with Research work, workshop and seminar has been 3.80 which was 2.67 before HEQEP. The comparative analysis shows that HEQEP supports have made significant contribution to improving situation of teaching and learning environment and research facilities in the beneficiary Departments. Figure-7 as given below shows a comparative view of the satisfaction level of the beneficiary faculty members.

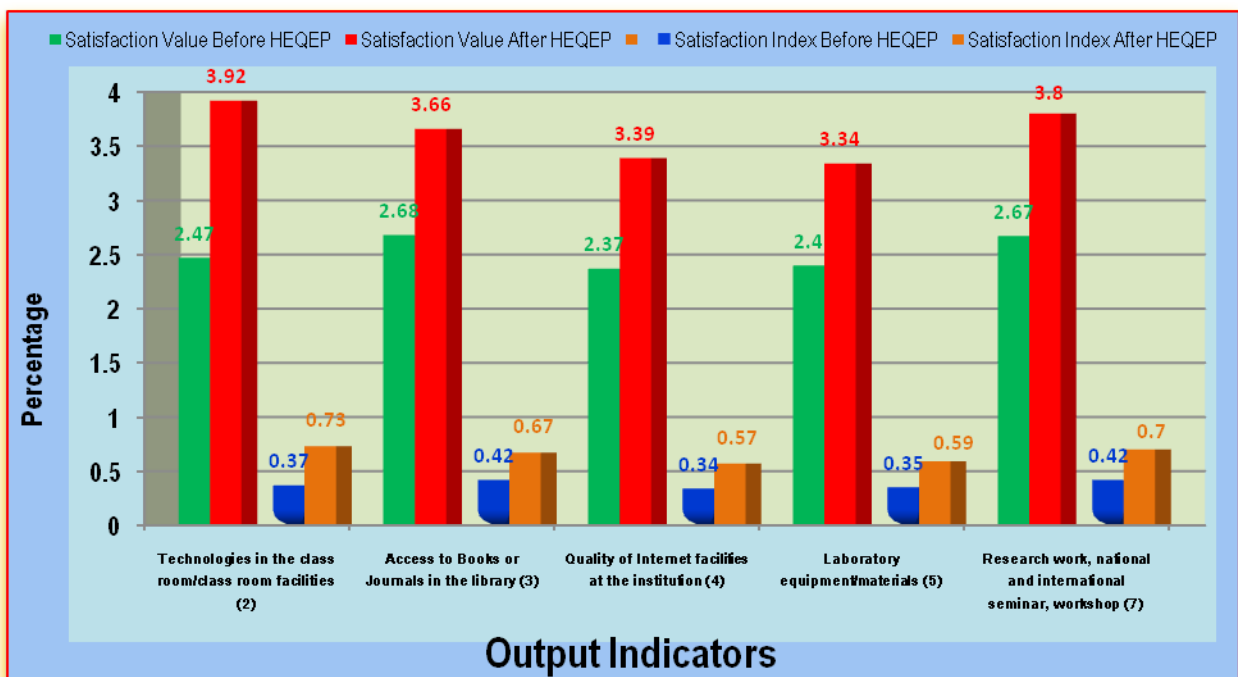


Figure-7: Graphical presentation of beneficiary faculty members satisfaction levels for before and after HEQEP intervention.

An objective analysis shows that HEQEP has significantly contributed to bring about positive changes in the overall teaching and learning environment in addition to quality teaching and research activities of each groups of universities. This is reflected from Figure-7 as depicted below:

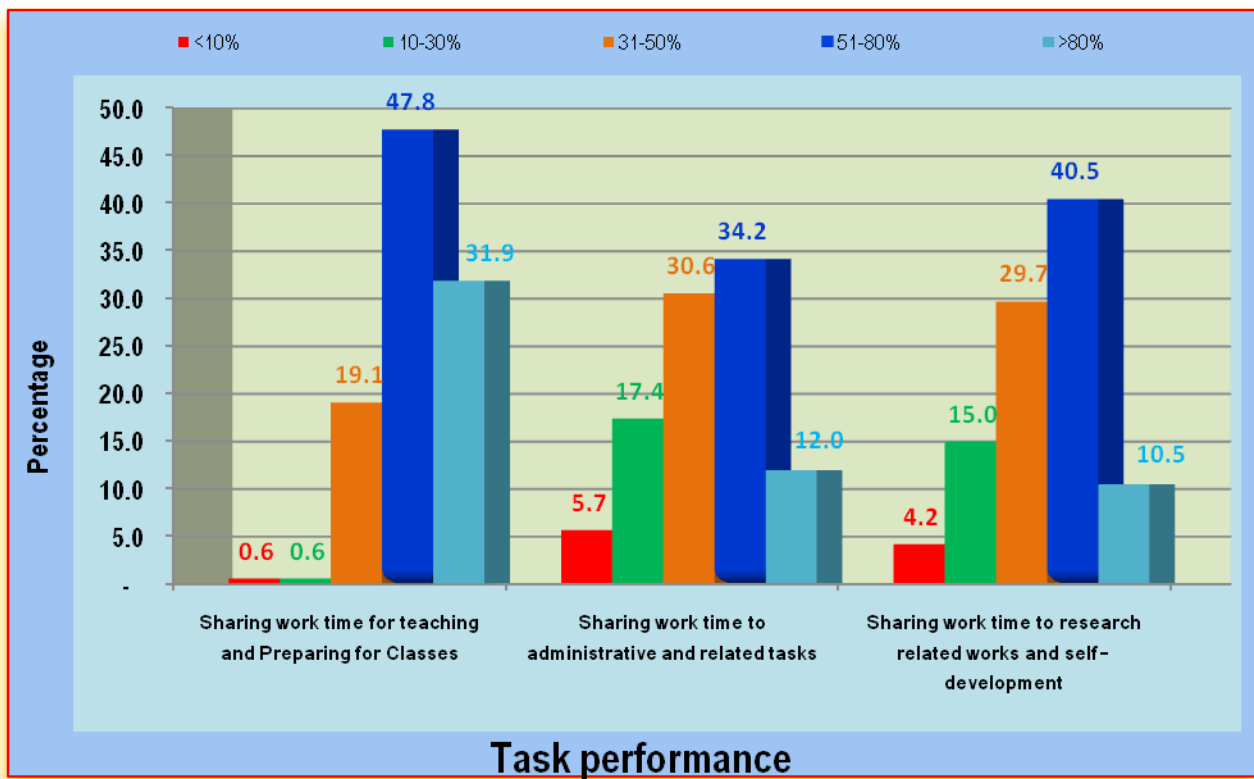


Figure-8: Graphical presentation of work-time allocation of beneficiary faculty members.

6.4 Employers' Opinion

The satisfaction survey has also covered taking opinion of representatives of 76 employer organizations. The responses from employers have centred around general skills and specific skills of new graduates who are employed. The responses were sought on the level of satisfaction of the employees on these two broad categories of skills. Only a minimum number of employers (13.3%) expressed the opinions that they are highly satisfied with the general skills the employees demonstrate, however 57.9% have expressed satisfaction with skills of the employees and 17% are somewhat satisfied.

About specific skills of employees representatives of 10.4% employers mentioned that they are highly satisfied with specific skills of new graduates who are employed, 53.2% said that they are satisfied and 24.2% were somewhat satisfied. This comparison shows that new graduates have comparatively lower level of competence than expected, particularly in specific skills than that in general skills.

This is given in the inference. There is scope to enhance employable skills of the students that are important for the employers.

6.5 Summary of comparative satisfaction levels of respondents

A comparative analysis was carried out between satisfaction level of respondents. The satisfaction levels of beneficiary respondents were determined through measurement of item-wise differences in the levels of satisfaction 'before' HEQEP and 'after' HEQEP intervention. Also satisfaction level of control group respondents have been calculated. An objective comparison in respect of situation for **beneficiary respondents** was also made between situation 'after' HEQEP and situation of **control group respondents**. Based on Key Performance Indicator (KPI) item-wise satisfaction levels were determined. The satisfaction levels of different categories of respondents are summarized in Table-9 below:

given below:

Table-9: Satisfaction levels against key performance indicators (KPI)

SL. No.	A. Students' Satisfaction	Before HEQEP	After HEQEP	Inference (%)
	Learning Environment of Beneficiary Departments	Satisfaction Value (SV ₁)	Satisfaction Value (SV ₂)	
	Output Indicator			
1	Technologies in the classroom / classroom facilities (2)	3.02	3.70	Improved by 22.51%
2	Access to Books or Journals in the library (3)	3.11	3.57	Improved by 14.79%
3	Quality of internet facilities at the institution (4)	2.90	3.40	Improved by 17.24%
4	Laboratory equipment / materials (5)	2.50	3.68	Improved by 47.20%
5	Seminars and Workshops (3)	2.70	3.60	Improved by 33.33%
	Average	2.85	3.59	
	Outcome Indicator			
6	Teaching & Learning (11)	-	3.73	
7	Learning Infrastructure (10)	-	3.72	
8	Industry Interactions (3)	-	3.47	
9	Support Service (6)	-	3.59	
	Average		3.63	
10	Overall Satisfaction		3.84	
	Learning Environment of Non-Beneficiary Departments			
	Output Indicator			
	Technologies in the classroom / classroom facilities (2)	2.98		
	Access to Books or Journals in the library (3)	2.99		
	Quality of internet facilities at the institution (4)	2.91		
	Laboratory equipment / materials (5)	2.98		
	Seminars and Workshops (3)	3.03		
	Average	2.97		
	Outcome Indicator			
	Teaching & Learning (11)	3.35		

	Learning Infrastructure (10)	3.08		
	Industry Interactions (3)	3.06		
	Support Service (6)	3.09		
	Average	3.15		
	Overall Satisfaction	3.46		
	B. Teachers' Satisfaction			
	Teaching & learning Environment of Beneficiary Departments			
	Output Indicator			
11	Technologies in the class room/class room facilities (2)	2.47	3.92	Improved by 58.70%
12	Access to Books or Journals in the library (3)	2.68	3.66	Improved by 36.57%
13	Quality of Internet facilities at the institution (4)	2.37	3.39	Improved by 43.04%
14	Laboratory equipment/materials (5)	2.40	3.34	Improved by 39.17%
15	Research work, national and international seminar, workshop (7)	2.67	3.80	Improved by 42.32%
	Average	2.52	3.62	
	Teaching & learning Environment of Non-Beneficiary Departments			
	Output Indicator			
	Technologies in the class room/class room facilities (2)	3.48		
	Access to Books or Journals in the library (3)	3.46		
	Quality of Internet facilities at the institution (4)	3.46		
	Laboratory equipment/materials (5)	3.14		
	Research work, national and international seminar, workshop (7)	3.05		
	Average	3.31		
	Becoming Effective and High quality Teacher & Researcher by Beneficiary Teachers			
	Outcome Indicators			
16	Professional Development (7)	-	3.80	
17	Research & Development ((5)	-	3.82	
18	Environment for Teaching & Researching (6)	-	3.90	
19	Networking (1)	-	3.94	
20	Industry International (3)	-	3.53	
21	Institutional Management & Administration (5)	-	3.90	
	Average		3.82	
	HEQEP Intervention Activities and Overall Environment of Beneficiary Department			
22	Academic Innovation Fund (9)		4.15	
23	BdREN (5)		3.70	
24	Self-Assessment (5)		3.93	
	Average		3.93	
	Overall Satisfaction (2)		4.09	
25	C. Employers' Satisfaction			
26	General Skills of Employees (12)	-	3.82	
27	Specific Skill of Employees (14)	-	3.76	

28	Competency of Non-Engineering Staff (9)	-	3.81	
29	Performance of Engineering & Technical Staff (8)	-	3.66	
	Average	-	3.76	
30	Overall Satisfaction on Job (1)	-	3.90	
<i>Note: Figure within the parenthesis indicates the number of indicative statements under each indicator as per questionnaire</i>				

6.6 Comparative study results on satisfaction level concerning overall quality of university departments

The overall satisfaction levels of the different categories of respondents participated in the opinion polls of the study replicate the extent of needs addressed further by the HEQEP interventions as compared with the baseline and IAS satisfaction survey conducted respectively in 2010 and 2013 shown in Table-10 below:

Table-10: Overall satisfaction about university departments by category of respondents

Departments	Baseline	Satisfaction Level	
		IAS-2013	FSS-2016
Students (all)	3.3	3.64	3.65
Students (under Intervention)	-	3.77	3.84
Students (control)	-	3.06	3.46
Teachers (all)	2.9	3.42	3.70
Teacher (under intervention)	-	3.61	4.09
Teachers (control)	-	3.04	3.31
Employers	-	-	3.90

Source: Baseline SS2010, IAS SS2013 and FSS 2016

Based on data in the above table comparative differences in satisfaction levels regarding overall quality of educational environment, teaching-learning and research activities of university departments is graphically visualized through Figure 9.

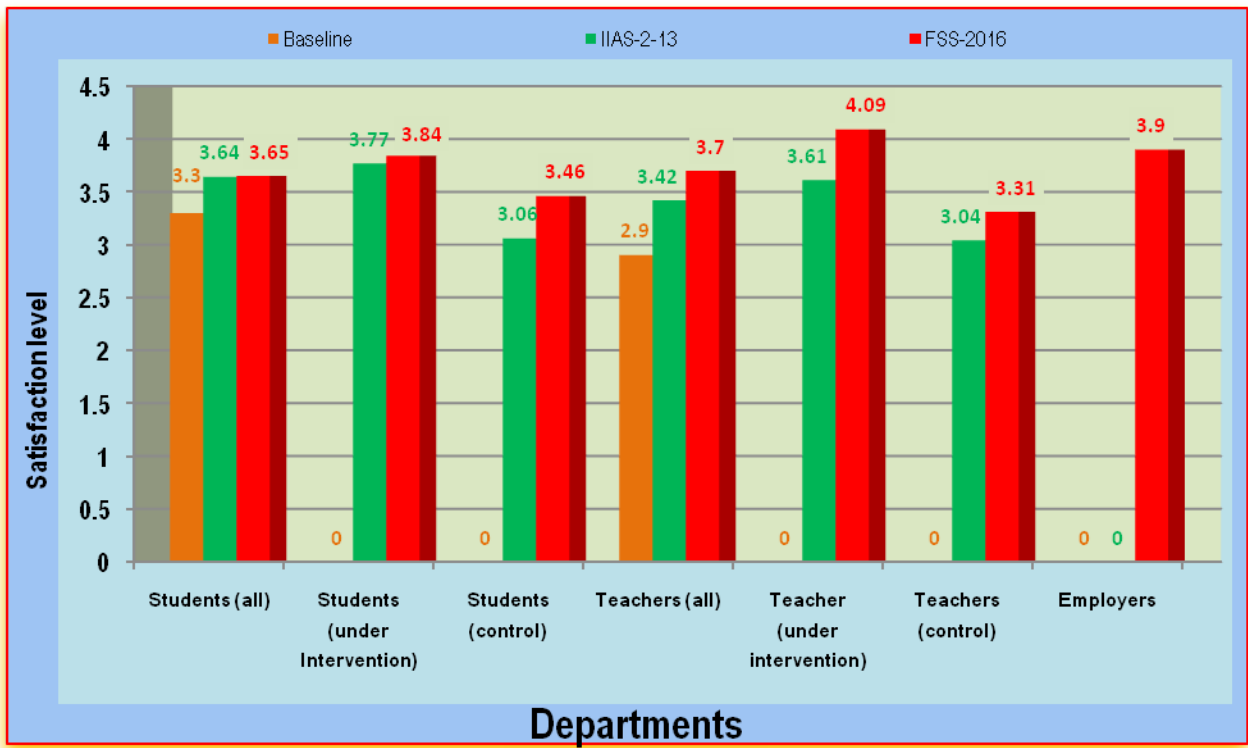


Figure-9: Comparative differences in stakeholders' satisfaction level

7. Recommendations

From an analysis of field data collected, findings from KIIs, deliberations in FGDs and information presented in case studies a number of recommendations are made. These are mentioned below:

- There should be continuation of the activities by the Department/Institute even when the project ends and the equipments should be well maintained even when the SPM retires or no longer in service. The commitment should be from the Department Head and it will be followed up by the next in charge.
- There should be a Project Assistant appointed by the Department/Institute who will be responsible for record keeping, reporting and maintaining project files. This can also solve the delay in reporting by the SPM which have been in some cases.
- All sub-project files and related papers should be maintained by the Department/Institute even after the completion of the project. The SPM should handover all relevant documents of the sub-project to the office of the Department/institute so that any time, reference can be made whenever there is need.
- Linkages and collaboration should be encouraged and established with universities abroad having the same type of interventions.
- An E-Directory should be developed of the HEQEP project, highlighting the main objectives of the sub-projects and interventions being implemented during the tenure of the sub-projects.
- The survey of employers has revealed that in respect of general skills and specific skills of employees the employers are generally satisfied about the level of competence of employees. It is recommended that universities modify the curricula that on one side addresses modern trends in subprojects and at the same time meet the needs of the employers organizations in different sectors of the economy.
- There is an indication that HEQEP supports have not been directly targeted at students. It is recommended that HEQUEP come with support programs that directly benefit the students for example giving stipends, books directly to students, or organizing study tour programs for students.
- The sub-projects can be categorized by types of outputs generated. There can be linkage among the sub-projects. An exhibition can be organized to display the results and outputs of sub-projects of same type.
- The ultimate purpose of improved quality of higher education is to enable students get good employment. HEQEP authority should increase number of sub-projects that involve University-Industry linkage.

- During implementation of the sub-projects the Public Procurement Rules 2008 (PPR) should be strictly followed by the SPM while purchasing / making available necessary goods, works and services from within and out-side the country.
- There should be continued support to universities to establish linkage with international research organizations and academic peers for conducting advanced and innovative researches including those associated with production system and market demands.
- A separate Higher Education Quality Enhancement Project (HEQE) Centre is established at each University having recurrent budget provision and fund for purchase and procurement of equipment and research materials based on individual departments' requirements.
- Duration of three years for sub-projects is not enough because of change in technology. For some of the important sub-projects budget needs to be granted annually for a period of ten years so that the facilities and improved method developed by the project can be kept functioning
- The sub-projects must have provisions for defraying cost of maintenance of labs. & workshops including equipment, instruments and services of lab. workshop Technicians and record keepers which should continue even after completion of the project.

8. Conclusion

In spite of many hurdles that often stood in the way of carrying out this assignment the members of study team sailed through lots of hustle and bustle at every stage of field data collection and analysis. Session jam has been a major setback which compels an undergraduate student to complete the 4-year course by more than six years. Situation about availability of respondents in the department for collecting their opinions became unpredictable.

Students have expressed the opinion that HEQEP is a good initiative for enhancing quality of teaching-learning environment in higher educational institutions / departments of university. It has provided an opportunity for improving quality of education and research in the departments/institutes. Moreover, it has provided support for developing infrastructure, laboratories, libraries and communication facilities in the departments/institutes. Students strongly feel that the imparted knowledge and skills through HEQEP should have linkage with industries and job market. They are in favour of continuation of the project.

Faculty members, especially of the universities outside Dhaka have found the HEQEP support very useful and used this as a source for up gradation of teaching and learning environment of departments/institutions. Through the AIF sub-projects, the teachers have gained experience in improving teaching quality and pursuing higher education research in some cases having specific linkages with industries. Besides, the universities have been able to procure up-to-date books and journals for use by students and teachers. It has considerably increased the duration of study at the libraries as well as duration of practical work in laboratories by the students.

The number of seminars and workshops in the departments has increased which has widened the scope for students and teachers to know about recent development in the disciplines of study. Moreover, the support from AIF of HEQEP has increased involvement of faculty members in academic discipline, helped increase in enrolment of post graduate students particularly those at M.Phil and Ph.D levels. The sub-projects facilitated advancement of information and communication technology facilities at the universities and enhanced employment situation of new graduates.

The department heads have given the view that HEQEP has addressed the needs for qualitative improvement in higher education particularly in master's and doctoral programs of the departments such as providing modern lab/workshop equipment and facilities. Moreover, the project support to the department/institute has made possible to use modern IT facilities such as WiFi, Wi-max, internet, multi-media system etc. At the same time, the department heads suggested that provisions should be there in the sub-project management for regular maintenance and sustainability of the interventions.

It should also be mentioned, at the end, that fiscal budget for higher-education sub-sector needs to be further increased from 0.65% to an acceptable level so as to continue this efforts of enhancement of quality in educational environment in university departments / institutes, teacher development and higher educational research linked to industrial problem solving and progress.