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# Quality of Higher Education in Agriculture in Bangladesh as Perceived by Students, Teachers and Mid-level Personnel

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## Abstract

The purpose of this study was to explore the quality and different aspects of higher education in agriculture in Bangladesh as perceived by the students, teachers and mid-level personnel. Necessary information were obtained from students, teachers and mid-level personnel of educational, research and extension organizations during March to August 2007. It was found that overall quality of higher education in agricultural was quiet satisfactory as opined by most of the respondents. The students of different universities spent more time in academic than that of non-academic purpose. Very small portion of students were highly studios. Bangladesh Agricultural University had the highest quality of agricultural education and its quality was significantly higher than that of Hajee Mohammad Danesh Science and Technology University. Existing learning facilities, teaching performance of the teachers and job performance of the students were satisfactory. Great majority of the students were happy with the existing course curricula. Classmate cooperation, residential facilities of the students, internet, availability of newspaper/TV and social relationship among the students were the top five influential factors affecting learning environment of the universities. Therefore, concerned universities and University Grants Commission can extend their endeavor towards the improvement of higher agricultural education through developing the pertinent factors.

***Keywords:*** *Quality of higher education, study behavior, teaching performance, course satisfaction.*

## Introduction

Quality of higher education refers to the four pillars of education: learning to know, learning to do, learning to live together and with others, and learning to be (Delors, 1996). Andre Beteille, an eminent sociologist said "universities are not only centres of learning, however badly or well they play their part in transmission and creation of knowledge, they are also social institutions that provide the setting for a very distinctive kind of interaction among men and women and between generations" (Beteille, 2005). Two main aspects of quality assessment in higher education can be highlighted: first, its growing degree of institutionalization as a part of the restructuring and governing of higher education systems; secondly, its contended and disputed features that undermine its legitimacy and then its fully fledged institutionalization (Vaira, 2007).

At the juncture of transformation of agricultural services and education it is necessary to take steps by the concerned authorities to maintain the quality of agricultural education in the country. The vision of agricultural education should be in line with the vision of agricultural development of the country. It is learnt that the University Grants Commission (UGC)

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has formed a national committee to reform the present education system of the country. The matter is that this committee may face difficulties to reflect the actual situation of the present agricultural education at higher level and to recommend the proper measures unless adequate information can be made available.

It seems that establishment of so many agricultural universities may contribute in improving the quality of agricultural education. From the early days of higher education on, the assessment of the quality of its processes and products has been an important focus of attention for higher education institutions. In this historical attention for quality, a certain tension is found which we nowadays still experience and which sometimes appears to be the source of heated debates (Vught and Westerheijden, 1994). Nevertheless, there are no such types of studies that can represent the actual situation of agricultural education in our country. Thus, the situation demands undertaking a study with a view to fulfill the following specific objectives: to explore the quality of higher education in agriculture in Bangladesh as perceived by the students, teachers and mid-level personnel; to determine the study behavior of the students of different agricultural universities; to assess different aspects of quality of higher education, namely existing learning facilities of different agricultural universities, teaching performance of the teachers as perceived by the students, course satisfaction by the students of agricultural universities and performance of agricultural graduates working in different development organizations; and to find out the factors influencing the learning environment of the university.

## Methodology

The study was carried out in five universities of Bangladesh offering higher education in agriculture, namely Bangladesh Agricultural University (BAU), Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Sher-e-Bangla Agricultural University (SAU), Patuakhali Science and Technology University (PSTU) and Hajee Mohammad Danesh Science and Technology University (HSTU). The undergraduate (level 3, level 4) and graduate students of different faculties and departments of the selected universities were the population of the study. Among them 350 students (195 from BAU, 35 from BSMRAU, 50 from SAU, 35 from PSTU and 35 from HSTU) were randomly selected as the sample of the study. Besides, 80 teachers of the five universities and 35 mid-level officers of Department of Agricultural Extension (DAE), Bangladesh Institute of Nuclear Agriculture (BINA) and Bangladesh Fisheries Research Institute (BFRI) were also randomly selected for obtaining information regarding quality of higher education. Structured and pre-tested interview schedule was constructed to collect information from the students. However, checklists were used to collect information related to the performance of the students as perceived by the teachers and job performance of the agricultural graduates as perceived by the mid-level personnel.

Quality of higher education was the prime query of this study. Quality of higher education was defined as the status of existing standard of higher education as perceived by the teachers, students and mid-level personnel of different educational, research and extension organizations. In this

study, quality of higher agricultural education referred to the extent to which it is standard as compared to that of other fields of study, how it can fulfill the national demand and whether the qualities of agricultural universities and graduates are standard. To measure the quality of higher education, a 5-point rating scale was constructed with 12 positive statements regarding various elements of quality of higher education. Respondents were asked to opine their extent of agreement with the statements. Scores were assigned as 1 for strongly disagree, 2 for disagree, 3 for no opinion, 4 for agree and 5 for strongly agree. Total score of a respondent for this variable could range from 12 to 60, where 12 indicated very unsatisfactory quality, 60 indicated very satisfactory quality of higher education and 36 was the neutral point in the scale.

In order to find out the factors influencing learning environment, at first factors were sought through experts' opinion and finally 20 factors were included in the interview schedule. Extent of influence of the factors on the learning environment was determined by seeking responses from the students based on a 4-point rating scale as 0 for no, 1 for low, 2 for medium and 3 for high influence of the factors to the learning environment of the university.

Data were collected during March to August 2007. Descriptive statistics such as, frequency, range, mean, percentage and standard deviation were used to describe the data. In order to make comparison among the universities concerning the quality of higher education Duncan's new multiple range test (DMRT) was carried out.

## Findings and Discussion

### Quality of Higher Education in Agriculture in Bangladesh

Exploration of the quality of higher education in agriculture in Bangladesh was the main attention of the study. It was assessed based on the perception of the students, teachers and mid-level personnel of different organizations related to agricultural education, research and extension. According to the students, the scores of quality of higher education of five agricultural universities under study ranged from 14 to 58 against the possible range of 12 to 60. The mean and standard deviation of the scores of quality of higher education of all universities were 40.42 and 8.70 respectively (Table 1). Among the students of different universities more than two-thirds (69.7 percent) opined that the quality of higher education of agricultural universities was satisfactory. About one-third of them agreed that the quality is at unsatisfactory level.

Great majority (83.7 percent) of the teachers were satisfied with quality of higher education. Among them 15 percent opined that quality of higher education in agriculture in Bangladesh was unsatisfactory. Most (62.9 percent) of the mid-level personnel thought that quality of higher education was satisfactory while 25.7 percent of them mentioned that quality is unsatisfactory. A small portion (3.2 percent) of students, 1.3 percent of teachers and 11.4 percent of mid-level personnel had no opinion regarding the quality of higher education in agriculture in Bangladesh.

Table 1 Distribution of respondents according the opinion regarding the quality of higher education in agriculture (n = 350)

| Respondents | N | Range | | Respondents | | | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|---|
| | | Possible | Observed | Category | Freq. | % | | |
| Students | 350 | 12-60 | 14-58 | Unsatisfactory (≤35) | 95 | 27.1 | 40.42 | 8.70 |
| | | | | No opinion (36) | 11 | 3.2 | | |
| | | | | Satisfactory (>36) | 244 | 69.7 | | |
| Teachers | 80 | 12-60 | 28-50 | Unsatisfactory (≤35) | 12 | 15.0 | 41.11 | 5.78 |
| | | | | No opinion (36) | 1 | 1.3 | | |
| | | | | Satisfactory (>36) | 67 | 83.7 | | |
| Mid-level personnel | 35 | 12-60 | 22-47 | Unsatisfactory (≤35) | 9 | 25.7 | 38.23 | 8.20 |
| | | | | No opinion (36) | 4 | 11.4 | | |
| | | | | Satisfactory (>36) | 22 | 62.9 | | |

According to the findings, there is an ample scope to improve the quality of higher education in agriculture in Bangladesh. A comparative examination of Table 1 reveals that the quality of higher education was more satisfactory according to the teachers than that of according to the mid-level personnel as indicated by the average scores for the teachers (41.11) and supervisors (38.23). The reason might include that the teachers delivered quality education to the students who in turn could not apply the knowledge in their respective job areas.

The comparison based on DMRT among the universities selected for the study has been shown in Table 2 which revealed that there were no big differences among the universities. BAU was statistically similar to PSTU, BSMRAU and SAU. On the contrary, HSTU was in the same cluster of SAU, BSMRAU and PSTU. Nevertheless, BAU maintained significantly greater quality in agricultural education than that of HSTU, because establishment of BAU took place about a half century ago, whereas HSTU is a newly emerged university. Besides, BAU has more experienced teaching staff and more educational facilities.

Table 2 Comparison among universities by quality of higher education

| Universities | Sample size | Means | S.E. |
|---|---|---|---|
| BAU | 195 | 41.38[a] | 0.62 |
| PSTU | 35 | 40.71[ab] | 1.46 |
| BSMRAU | 35 | 39.94[ab] | 1.46 |
| SAU | 50 | 39.06[ab] | 1.22 |
| HSTU | 35 | 37.23[b] | 1.46 |

The sample sizes were unequal. The harmonic mean (45.109) of the samples was used. Different superscripted letters indicate that there are significant differences among the samples at 5 percent level of probability.

However, the extent of agreement with different statements regarding the quality of higher education in agriculture in Bangladesh has been presented in Table 3 (possible range of score being 0 to 5). The average extent of agreement for different statements was more or less similar. None of the statements was agreed to either very high or very low extent. Among the statements, 'higher education can fulfill the national demand of quality graduate' was in the top most rank. National demand referred to the ability of the graduates to serve the country as well as the ability to perform official, political and social duties and responsibilities assigned to them.

Agricultural graduates are working in various government and non-government organizations with greater success. For this reason, the aforementioned statement ranked in the first position. On the other hand, the statement 'learning environment is favorable for education' ranked in the last position' which was a reminder of further improvement of the existing learning environment of the agriculture related universities.

Table 3 Extent of agreement with the statements regarding quality of higher education

| Statements regarding quality of higher education | Average score |
|---|---|
| Higher education can fulfill the national demand of quality graduate | 3.70 |
| Students attain qualification sufficient for new job | 3.33 |
| Students achieve the ability to adjust with new situation | 3.71 |
| Education of the agricultural universities is equivalent to other fields | 3.26 |
| Lifestyle of the graduates is pleasing | 3.01 |
| Manpower produced from agrivarsity is able to reform society | 3.68 |
| Agricultural graduates are not prone to corruption while in the job | 2.93 |
| Standard of agricultural universities is up to the desired level | 3.45 |
| Quality of teachers is satisfactory | 3.20 |
| Quality of students is in expected level | 3.32 |
| Agricultural courses are need based | 3.32 |
| Learning environment is favorable for education | 3.51 |

**Study Behavior of the Students**

It was measured based on the time spent per day in various academic activities by the students of different agricultural universities. Time spent in different activities ranged from 1.5 to 11.5 hours per day with an average of 6.42 hours per day and standard deviation 1.90 hours per day (Table 4). Information presented in Table 4 indicate that more than half (54.0 percent) of the students were moderately studious while about one-third (35.1 percent) of them were less studious and only 10.9 percent were highly studious in nature.

Table 4 Categories of students according to their study behavior

| Range of time spent in academic activities | Respondents | | | Mean | Std. Dev. |
|---|---|---|---|---|---|
| | Category | Freq. | % | | |
| 1.5-11.5 hr/d | Less studious (< 6 hr/d) | 123 | 35.1 | 6.42 | 1.90 |
| | Moderately stud. (6-8 hr/d) | 189 | 54.0 | | |
| | Highly studious (>8 hr/d) | 38 | 10.9 | | |
| | Total | 350 | 100 | | |

*Note: hr/d is used for hours per day*

The selected five universities were compared on the basis of average time spent by the students in academic and non-academic activities (Figure 1). It was found that the students spent more time in academic activities than that of non-academic activities in all the universities. Total time spent in academic and non-academic activities was the highest in HSTU (10.38 hours per day) followed by

PSTU (10.34 hours per day). However, average time spent in academic activities was the highest in PSTU and that of non-academic activities was in SAU. It might be due to the locations of the universities, as PSTU is located in a local area while SAU is located in the capital city. In case of average time spent in academic activities, BSMRAU was in the lowest position. Anyway, the pattern of time spent in academic and non-academic activities by the students in different selected universities was similar. There was no sharp difference found among the universities regarding study behavior of the students.

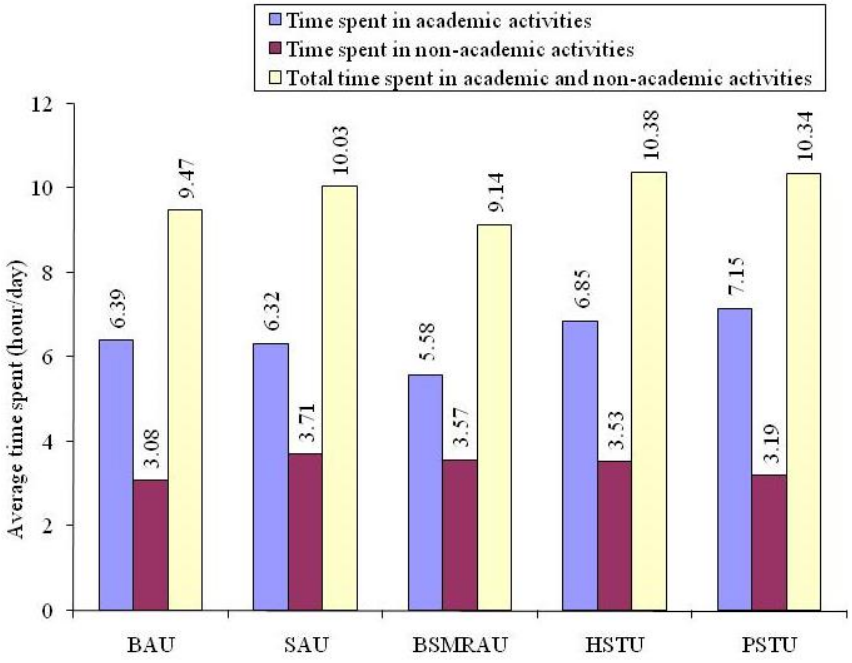


Figure 1: Study behavior of the students based on time spent in academic and non-academic activities

Academic and non-academic activities were ranked according to the average time spent per day in those activities by the students of agricultural universities (Table 5). According to the information furnished by the students, the students spent maximum time in study at residence followed by theory class and practical class at lab. Rank of 'library use' was eighth which implied more attention of the teachers. The trend of library use is decreasing day by day because of the availability of ready made hand outs and internet facilities. Perusal of text books is being overlooked which is a matter of concern. It is difficult to fetch detailed insight of a concept without studying text books.

**Other Aspects of Quality of Higher Education in Agriculture**

In addition to the quality of higher agricultural education and study behavior of students, some other pertinent aspects of higher education were explored too. The aspects were status of existing learning facilities, teaching performance of the teachers, course satisfaction by the students, performance of students as perceived by the teachers and job performance of graduates

from different agricultural universities. The findings of these aspects have been interpreted with the following sub-sections:

Table 5 Average time spent in different activities

| Activities | Average time spent (hour) | Rank |
|---|---|---|
| Study at residence | 1.99 | 1 |
| Theory class | 1.65 | 2 |
| Practical class in lab | 1.26 | 3 |
| Watching TV | 0.88 | 4 |
| Reading newspaper | 0.68 | 5 |
| Practical class in field | 0.59 | 6 |
| Listening music/radio | 0.58 | 7 |
| Library use | 0.55 | 8 |
| Internet browsing | 0.37 | 9 |
| Indoor games | 0.34 | 10 |
| Voluntary activities | 0.28 | 11 |
| Cultural activities | 0.24 | 12 |
| Political activities | 0.16 | 13 |
| Outdoor games | 0.11 | 14 |

**Status of Existing Learning Facilities**

The scores of the status of existing learning facilities of five universities under study ranged from 26 to 68 against a possible range of 15-75. The mean and standard deviation of the scores were 46.09 and 8.36 respectively (Table 6). More that half (54.6 percent) of the students of different universities were satisfied with the status of existing learning facilities. However, substantial number (42.0 percent) of the students were unsatisfied and only 3.4 percent of them had no opinion about the status of existing learning facilities. Less improved class room, low speed internet facilities and harmful influence of politics on the learning environment were the major causes of dissatisfaction of the students with the existing learning facilities of the universities.

Table 6 Status of existing learning facilities

| Range | | Respondents | | | Mean | Std. Dev. |
|---|---|---|---|---|---|---|
| Possible | Observed | Category | Freq. | % | | |
| 15-75 | 26-68 | Unsatisfactory (≤44) | 147 | 42.0 | 46.09 | 8.36 |
| | | No opinion (45) | 12 | 3.4 | | |
| | | Satisfactory (>45) | 191 | 54.6 | | |
| | | Total | 350 | 100 | | |

**Teaching Performance of the Teachers**

Average score of teaching performance of the teachers as perceived by the students was 71.86 based on a scale range of 21 to 105 where mid-point was 63 (Table 7). Nearly three-fourths (73.4 percent) of the students had satisfactory view about the teaching performance of the teachers. Nonetheless, there were one-fourth of the students who were not satisfied with the teaching performance of the teachers. It was observed that unpunctuality, irregularity, class taking without preparation and improper evaluation of exam paper were the root causes of deterioration of teaching performance of the university teachers.

**Course Satisfaction by the Students**

The scores of course satisfaction by the students varied from 7 to 35 with an average 25.48 (Table 8). Great majority (80.3 percent) of the students were satisfied with the course they had to study. The courses offered in different agricultural universities are burdened with theoretical concepts which fail to sharpen analytical skills of the students. That is why 18.9 percent of the students could not be happy

with the existing course-curricula of agricultural universities. Course satisfaction is a prerequisite of motivation to learning by the students. The learners get bored with the courses that fail to arouse interest for learning. Reducing the overlapping of contents of different subjects, making the course more practical oriented and reforming the practical notebook writing system might be some hopeful options in order to present the courses to the students with greater satisfaction.

Table 7 Teaching performance of the teachers

| Range | | Respondents | | | Mean | Std. Dev. |
|---|---|---|---|---|---|---|
| Possible | Observed | Category | Freq. | % | | |
| 21-105 | 29-104 | Unsatisfactory (≤62) | 87 | 24.9 | 71.86 | 14.12 |
| | | No opinion (63) | 6 | 1.7 | | |
| | | Satisfactory (>63) | 257 | 73.4 | | |
| | | Total | 350 | 100 | | |

Table 8 Course satisfaction by the students

| Range | | Respondents | | | Mean | Std. Dev. |
|---|---|---|---|---|---|---|
| Possible | Observed | Category | Freq. | % | | |
| 7-35 | 7-35 | Unsatisfactory (≤20) | 66 | 18.9 | 25.48 | 5.23 |
| | | No opinion (21) | 3 | 0.8 | | |
| | | Satisfactory (>21) | 281 | 80.3 | | |
| | | Total | 350 | 100 | | |

**Performance of Students Perceived by the Teachers**

Performance of the students in both inside and outside the class was investigated with the responses obtained from the teachers. Table 9 shows that the average score of students' performance inside the class was 27.15 (out of maximum possible score of 47) and that of outside the class was 16.61 (out of maximum possible score of 33). Among the teachers selected as the respondents, 72.5 percent mentioned that the performance of the student inside the class was good while 26.2 percent of them mentioned that was excellent. Most of the respondents (86.2 percent) thought that the performance of the students was good in outside the class. Accordingly, the overall performance of the students was good as replied by majority (83.7 percent) of the teachers.

Table 9 Performance of students as perceived by the teachers (n = 80)

| Performance of students | Range | | Respondents | | | Mean | Std. Dev. |
|---|---|---|---|---|---|---|---|
| | Possible | Observed | Category | Freq. | % | | |
| Inside the class | 0-45 | 11-35 | Poor (≤15) | 1 | 1.3 | 27.15 | 5.06 |
| | | | Good (16-30) | 58 | 72.5 | | |
| | | | Excellent (>30) | 21 | 26.2 | | |
| Outside the class | 0-33 | 6-23 | Poor (≤11) | 7 | 8.8 | 16.61 | 3.79 |
| | | | Good (12-22) | 69 | 86.2 | | |
| | | | Excellent (>22) | 4 | 5.0 | | |
| Overall | 0-78 | 23-57 | Poor (≤26) | 3 | 3.8 | 43.76 | 7.35 |
| | | | Good (27-52) | 66 | 83.7 | | |
| | | | Excellent (>52) | 11 | 12.5 | | |

It is notable that only 5 percent of the teachers mentioned the performance of the students outside the class was excellent. This indicated that there was large gap between the actual and potential performance of the students. Negligence to class attendance, irrational demand of the students to delay the examinations, student politics etc. were responsible for lower performance of the students as perceived by the teachers.

**Job Performance of Agricultural Graduates**

Job performance of agricultural graduates was investigated on the basis of the responses furnished by the mid-level personnel of different organizations. The observed range of score varied from 22 to 54 against the possible range of 0 to 57 with a mean value of 31.74 and standard deviation 10.03 (Table 10). Job performance of the agricultural graduates was classified as poor, good and excellent based on the mean and standard deviation of the scores of this aspect. Most (85.7 percent) of the personnel replied that the performance of agricultural graduates was good and the rest 14.3 percent mentioned the performance as excellent. It is a good indication regarding quality of higher education that no respondent replied the performance of the agricultural graduates as poor quality. The mid-level personnel are the nearest higher officials to look after the fresh agricultural graduates of different agricultural universities. Therefore, their responses are very much important in deciding the job performance of the agricultural graduates which in turn is directly linked with the quality of higher education in agriculture in Bangladesh.

Table 10 Job performance of agricultural graduates

| Range | | Respondents | | | Mean | Std. Dev. |
|---|---|---|---|---|---|---|
| Possible | Observed | Category | Freq. | % | | |
| 0-57 | 22-54 | Poor (≤21) | 0 | 0 | 31.74 | 10.03 |
| | | Good (22-42) | 30 | 85.7 | | |
| | | Excellent (>42) | 5 | 14.3 | | |
| | | Total | 35 | 100 | | |

**Factors Influencing the Learning Environment of the University**

Twenty factors influential to the learning environment of the university were examined with a four-point rating scale in order to rank the factors based on their extent of influence. The average score for each of the factors could range from 0 to 3 while the observed range of averages was 1.49 to 2.19 (Table11). It was observed that classmate cooperation was the most influential factor of learning environment followed by residential (hall) facilities, internet facilities, availability of newspaper /TV and so on.

Table 11 Ranking of the factors influencing learning environment

| Rank | Factors influencing learning environment | Mean |
|---|---|---|
| 1 | Classmate cooperation | 2.19 |
| 2 | Residential (hall) facilities | 2.11 |
| 3 | Internet facilities | 2.09 |
| 4 | Availability of newspaper /TV | 2.04 |
| 5 | Social relationship among | 2.02 |

| Rank | Factors influencing learning environment | Mean |
|---|---|---|
| | the students | |
| 6 | Recruitment system of the teachers | 2.01 |
| 7 | Course difficulty | 1.96 |
| 8 | Availability of books in the library | 1.92 |
| 9 | Cooperation by the teachers | 1.91 |
| 10 | Political situation of the country | 1.90 |
| 11 | Teacher politics | 1.88 |
| 12 | Staff management | 1.87 |

Classmate cooperation depends on the interrelationship among the students. At present, different universities are suffering from the low cohesiveness among the students as they are being divided into several groups mainly based on locality and politics. Crisis of residential facilities for the students of higher agricultural education is another important factor which may adversely affect the learning environment. The factors which ranked at the lower positions, such as recreational facilities, transport facilities, student politics etc. did not mean that they needed no attention. All the factors included in the study were based on the experts' opinion and such those are fundamental. So, these factors require careful manipulation for the expected improvement of learning environment of the universities offering higher education in agriculture.

## Conclusion

Quality of higher education in agriculture in Bangladesh was satisfactory as perceived by majority of the students, teachers and mid-level personnel of different related organizations. Still there were substantial portions of the respondents who possessed unsatisfactory view about the quality of higher education. Therefore, the quality of higher education urges for its further improvement. It was found that BAU had the highest quality of agricultural education. So, other universities can follow the overall educational system of BAU. Less studious students have to be identified and they can be motivated towards learning by counseling. Greater scopes are available for improving the status of learning facilities through upgrading the course curricula, facilities of classroom, practical field, laboratory, library etc. Teaching performance of the teachers needs to be enhanced through foundation training and enhancing intercommunication among the teachers of different universities.

Most of the teachers opined that the performance of the students in the class was good, not excellent. In order to get excellent performance of the students, their study behavior, involvement in drug addiction and destructive political activities should be handled carefully. Job performance of agricultural graduates can be enhanced through improving the quality of education having prior consultation with the service providers in the field of agriculture. Attention must be paid to keep the highly influential factors of learning environment at desirable level. Such factors include classmate cooperation, residential facilities of the students, internet facilities, availability of newspaper/TV, social relationship among the students etc. However, this study was a preliminary attempt to explore the quality of higher agricultural education in Bangladesh. Therefore, concerned universities and University Grants Commission of Bangladesh have to extend their further endeavor towards the improvement of quality of higher education in agriculture through research as well as implementation of the recommendations.

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