Dr. Quamrul H. Mazumder, University of Michigan, Flint

Quamrul Mazumder is an Associate Professor of mechanical engineering at University of Michigan, Flint. His research interests includes computational fluid dynamics, metacognition approaches of learning, active and experiential learning, renewable energy, and global engineering education. His teaching areas are fluid mechanics, renewable energy, introduction to engineering, and senior design. He is a Fulbright specialist in engineering education discipline.

Prof. Md. Rezaul Karim Ph.D., Khulna University, Bangladesh

Urban and rural planning discipline. Email: rkarim@kuurp.ac.bd. Click the following link a detailed biography: http://www.kuurp.ac.bd/rezaul.html.

Dr. Serajul I. Bhuiyan, Auburn University, Montgomery

Educated in Bangladesh and United States, Serajul I. Bhuiyan has more than 20 years of experience as professor, Researcher, International Consultant, and an academic executive. Currently, he is professor and Head of the Department of Communication and Dramatic Arts at Auburn University, Montgomery (AUM), Ala., USA. Before joining AUM in 2008, Bhuiyan served as Professor and Director of Mass Communication and Journalism at Lincoln University in Pennsylvania, USA; the professor and Founding Director of the Mass Communication Department at Texas A&M University, Texarkana, USA; and Associate Professor of Communication at Alcorn State University in Mississippi, USA. Prior to joining Alcorn State, he served as Assistant Professor at Nanyang Technological University in Singapore and Visiting Professor at University of South Australia, the Griffith University in Australia, and National University of Ireland. He worked for the United Nations, the Netherlands government, and the government of Malaysia as a training consultant. He served as a consultant for the Higher Education Quality Enhancement Project (HEQEP) in Bangladesh funded by the World Bank. Bhuiyan has earned his Ph.D. degree in mass communications from the University of Wisconsin, Madison, in May 1996, as a World Bank Scholar. He received his M.B.A. from Texas A&M University, Texarkana, in 2003. He received his B.S. (honors) in economics and rural sociology and M.S. in ag. communication from BAU in 1983 and 1985, respectively. He further studied in graduate programs at Cornell University, Iowa State University, University of Dubuque, Iowa, and at the University of Philippines at Los Banos, Philippines. He received professional training in journalism from Harvard University, Dow Jones Newspaper Fund, Inc., Poynter Institute, American Press Institute, American Society of Newspaper Editors, and the Pew Research Center. He worked with the newspapers as a Reporter/Stringer/Guest Columnist and Associate Editor for about 15 years in USA, Singapore, Japan, and Bangladesh. Bhuiyan was an Associate Editor of Madison Times and Guest Columnist for Wisconsin State Journal, the Capital Times in Wisconsin, USA, the Business Times in Singapore, and the Asahi Evening News in Tokyo. He was a News Reporter for the Daily Ittefaq, the New Nation, and radio and television in Bangladesh. Bhuiyan was awarded a fellowship from the American Society of Newspaper Editors (ASNE) Institute for Journalism Excellence in the summer 2001. Under this fellowship, he worked for the Columbus Ledger-Enquirer, a Knight Ridder newspaper in Georgia, and he interviewed former President Jimmy Carter in July 20, 2001, which created national and international headlines. He acted as a peer reviewer for various professional journals in Asia, Australia, and the United States. Bhuiyan is actively involved in Association for Education in Journalism and Mass Communication in USA. He has authored more than 46 research papers and wrote a chapter of a book on media in Asia.
Higher Education Quality Improvement in Bangladesh

Abstract

There have been ongoing initiatives by all stakeholders of the higher education system of Bangladesh to improve the quality of education by developing a unified standard among all higher education institutions. To date, these efforts and initiatives have been largely unsuccessful due to a lack of understanding of the current state of education quality. Unfortunately, the problems are gradually magnifying as new private universities are evolving without any infrastructure, government regulation, or accreditation bodies. Three years ago, a large project financed by the government and the World Bank was initiated to enhance quality with a number of sub-projects.

This paper identifies the root causes of the challenges faced by the higher education system as well as explains how these challenges can be addressed effectively. A recent visit to Bangladesh as a consultant to improve the quality of higher education revealed the higher education system requires a major overhaul. Not only is there no pedagogical research or training available to faculty but faculty motivation is also low. The higher education system employs rote memorization approach rather than critical thinking by students. With significant political and economic pressure, the current, non-transparent system must be changed before any reasonable improvements can be made. Information presented in this paper will be valuable for other developing countries as well since they may face similar issues in their own higher education systems.

Introduction

Although there have been many articles, discussions, and initiatives for improving the quality of higher education in Bangladesh, most did not provide a clear understanding of the meaning of quality and its applicability to higher education. There are several definitions and approaches to quality that were developed with a particular focus on industrial products and services. Among the various approaches, total quality management (TQM), ISO 9000, Quality Function Deployment (QFD), and six sigma are the most widely utilized [1-4]. Although using different measures of a customer satisfaction index, these approaches have the commonality of defining quality as “meeting or exceeding customer requirements.” In addition, these methods also define quality as a repeatable process, thus reducing variation among products and services.

There are fundamental differences and challenges associated with applying these industrial or business-focused quality principles to higher education due to significant philosophical differences between these sectors. First, higher education is primarily a service with most of the institutions considered to be non-profit. Second, in applying the currently available quality principles there is no clear understanding of who the customers of higher education are. Customers of higher education can be considered students, parents, society, or the government each of whom may have different and conflicting expectations.

Before any meaningful progress can occur in higher education, all stakeholders must develop consensus-based quality expectations from the institutions of Bangladesh. For only minuscule
progress can result from assumptions about customer expectations and haphazard improvement initiatives. Another critical area to be evaluated is the knowledge and skill level of faculty and administrators in the higher education sector. Although senior administrators may be content experts in their respective fields, they now face overwhelming pressure to improve quality from multiple groups. The simplest form of improvement requires changes in curriculum, instruction, faculty involvement, resource allocation, and student services. However, due to the unavailability of institutional resources, these internal improvement needs must be carefully prioritized.

**Literature Review**

The definition of quality adopted by most analysts and policy makers in higher education is fitness of purpose [5]. In this view, the level of quality is determined by the extent to which a product or service meets its stated purpose(s) or requirement(s). Due to a lack of consensus among different stakeholders and/or customers, it is challenging to articulate the purpose of higher education. The objective of higher education may be instruction in skills, promotion of the general powers of the mind, advancement of learning, and transmission of a common culture and standard of citizenship [6]. The above list is not exhaustive as the objective of higher education may also include developing critical thinking abilities, creativity, gainful employment, the discovery of knowledge, and social, moral, and ethical standards. The concept of conforming to specification and standards originated in the manufacturing industry as a basis for measurement to describe the required characteristics of a product or service that would satisfy customer requirements. Higher education institutions can measure quality in terms of academic standards. The term standard causes other challenges as it often conveys excellence or high standards [7]. Academic standards can broadly be defined in terms of teaching, learning, research, course, curriculum, admission procedures, physical resources, academic advising, faculty involvement, etc. The above standards can be classified into three distinct areas: input as incoming students, output as student achievement or academic success, and management and control during the course of study.

Another important dimension of quality is to meet customer requirements in addition to conforming to standards. Deming stated, “the difficulty in defining quality is to translate future needs of the user into measurable characteristics, so that a product can be designed and turned out to give satisfaction at a price that the user will pay” [8]. However, as mentioned earlier, the customers of higher education are uncertain, and each proposed customer has differing ideas of quality in higher education. If the output of higher education is defined as a product, then it is not clear whether students are consumers, products, or both. One solution to this dilemma is to define students as consumers when attending a university and then to consider students as the product immediately after graduation. Quality is a relative concept that different interest groups or stakeholders in higher education view differently [9]. Quality as a reduction of variation can be applied to higher education as a repeatable process. This can be achieved by providing consistent instructions to improve the performance of students. The current system ignores variation, resulting in a significant number of students being unsuccessful after receiving a degree. Success criterion in higher education should not be limited to only academic success measured by grades, but to overall success - such as leadership, communication, moral and ethical standards, critical thinking skills, and/or similar attributes. Reduction in variation
requires identifying the variations using a cause and effect diagram developed by Kaoru Ishikaway [10]. Variations may exist among incoming students as well as in the processes used by the institutions. This results in a variation of output or the graduates’ quality. Although it may be difficult and even impossible to identify and eliminate all sources of variations, institutions should attempt to develop a process to reduce the variations that have a significant impact on the output.

Quality of Higher Education in Bangladesh

One of the determinants of quality in an institution is the quality of instruction provided by the teachers in the classroom and beyond. A study was conducted to evaluate the teaching quality at Bangladesh Agricultural University based on feedback from postgraduate students [11]. Although this study may not be representative of the quality of the entire country’s higher education system, it does provide insight into the quality of instruction and teacher. The survey included questions about the personal attributes of faculty and teaching performance. The study revealed only 20 percent of the faculty had excellent teaching performance, while 32 percent had poor or very poor performance. Six attributes of the faculty demonstrated a positive correlation with their teaching performance: moral character, behavior towards students, academic record in their student life, time spent in the office, job satisfaction, and involvement in research. Other attributes, such as highest degree, service length, position, and economic solvency, demonstrated no correlation with teaching performance.

The impact of service quality on the satisfaction level of students was measured using a five dimensional service quality model (SERVQUAL) [12]. The five dimensions in the model were assurance, empathy, reliability, tangibility, and responsiveness. Results of the study showed a significant relationship between the service quality and student satisfaction [13]. The study also reported students with a higher level of satisfaction were also motivated towards greater academic success. The SERVQUAL model was also used to extract critical factors affecting the quality in private universities of Bangladesh [14]. The study unveiled students need prompt advising, counseling, availability of faculty beyond class, and staff support to resolve problems faced by students in a timely manner.

Current Work

To identify the issues with quality in higher education, a survey was conducted to understand the faculty’s perceptions of areas to improve. Faculty members are internal customers who are intimately involved in the implementation of improvement initiatives. Thus, their input should be considered carefully. Before conducting the survey, pilot testing was conducted in three universities to validate and update the questionnaire. The survey questions used a five point Likert Scale with response options as strongly agree, agree, neutral, disagree and strongly disagree. The thirty-question survey was divided into four different areas in order to identify which areas have the greatest needs. These areas were curriculum, assessment, faculty involvement, and administration support. The survey was sent electronically to all ninety-one project managers who received a grant from the University Grant Commission for Higher Education Quality Enhancement Projects (HEQEP). The project managers were from different public and private universities across the country and adequately represent the higher education.
faculty population in the country. Eighty-eight responses were received with interesting findings as shown in Table 1, 2, and Figure 1 below.

Table 1: Survey Results Related to Curriculum and Assessment (N=88)

<table>
<thead>
<tr>
<th>Curriculum</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q 1</td>
<td>Q 2</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>1%</td>
</tr>
<tr>
<td>Disagree</td>
<td>15%</td>
</tr>
<tr>
<td>Neutral</td>
<td>4%</td>
</tr>
<tr>
<td>Agree</td>
<td>49%</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>31%</td>
</tr>
<tr>
<td>Overall Agree</td>
<td>80%</td>
</tr>
<tr>
<td>Overall Disagree</td>
<td>16%</td>
</tr>
<tr>
<td>Neutral</td>
<td>4%</td>
</tr>
</tbody>
</table>

In the program and curriculum related questions, an overwhelming number of respondents (80-90%) agreed that the improvement of curriculum and defining program objectives is an important factor (Q1-Q8). In the assessment questions (Q9-Q13), the importance of a program assessment every five years was reported by 93% of the participants. Similarly, 92% of the respondents believed that an assessment of student learning outcomes at the course level was necessary. Whereas only 72% of the respondents reported that regular assessments of learning outcomes should be performed. In response to the faculty involvement questionnaires (Q14-Q22), 55-58% of the responses showed that faculty and administrators have knowledge, understanding of pedagogy (teaching and learning methodologies), course objectives and curriculum mapping. Table 2 shows that 89% respondents agreed that professors require training in the area of pedagogy to improve their understanding of teaching and learning methodology, which is essential to quality improvement.

Table 2: Survey Results for Faculty Involvement and Administrative Support (N=88)

<table>
<thead>
<tr>
<th>Faculty Involvement</th>
<th>Administration Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q14 Q15 Q16 Q17 Q18 Q19 Q20 Q21 Q22 Q23 Q24 Q25 Q26 Q27 Q28 Q29 Q30</td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>2%</td>
</tr>
<tr>
<td>Disagree</td>
<td>17%</td>
</tr>
<tr>
<td>Neutral</td>
<td>25%</td>
</tr>
<tr>
<td>Agree</td>
<td>43%</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>13%</td>
</tr>
<tr>
<td>Overall Agree</td>
<td>56%</td>
</tr>
<tr>
<td>Overall Disagree</td>
<td>19%</td>
</tr>
<tr>
<td>Neutral</td>
<td>25%</td>
</tr>
</tbody>
</table>
Among the areas requiring attention in the higher education system of Bangladesh, critical thinking requires critical improvement. In the survey, 61% of the respondents acknowledged rote memorization to be the primary attribute for academic success (Q8). However, approximately 50% of the faculty undertook no initiative to improve instructional methods or student learning. The lack of support or incentive from university administration for pedagogical research or initiatives was also identified as a major barrier towards quality improvement. It appears that a number of quality improvement areas can be addressed by improving knowledge and understanding about quality and pedagogy among university administrators and faculty members at different universities. The summary of the survey results presented in Figure 1 shows five areas of improvement that are related to Q1, Q3, Q9, Q11, and Q22. These areas of improvement must be prioritized to make the improvement process more effective. These areas include curriculum, a clear definition of mission, program review and faculty training needs. The faculty training is probably the most important factor, as the other four areas depend on this.

**Quality Function Deployment (QFD) Analysis**

An attempt was made to apply the Quality Function Deployment (QFD) technique to identify and prioritize the areas requiring improvement. Each application of QFD provides the opportunity for further improvements. The goals of higher education institutions include the development of sustainable academic standards such as a coherent environment of learning and teaching, imparting value to students, fairness in examination and management policies, participation at all levels, etc. In Figure 2 above, the left column lists the areas requiring improvement. This information was collected from eighty-eight faculty members from higher
education institutions across Bangladesh [15]. For example, curriculum improvement was one of the areas identified by the respondents. In Figure 2 above, the top row lists the techniques and attributes required to improve each quality aspect. For example, knowledge of pedagogy may help improve the curriculum. The key in the top left of Figure 2 indicates the relationship between the areas of improvement and possible processes and attributes to improve each area. The QFD analysis reported knowledge of pedagogy, training, and access to training can address a large number of needs identified by faculty in order to improve quality. The QFD analysis presented in Figure 2 should be considered as preliminary to better understand the area of needs that requires improvement. The author is currently updating the QFD model and an improved model will be presented in a future paper.

<table>
<thead>
<tr>
<th>Strong Relationship</th>
<th>Knowledge of Pedagogy</th>
<th>Understand of Program Objective</th>
<th>Knowledge of Accreditation</th>
<th>Knowledge Curriculum Mapping</th>
<th>Knowledge of Learning Style</th>
<th>Knowledge of Metacognition</th>
<th>Training need on Pedagogy</th>
<th>Administrative Support/density</th>
<th>Access of Training</th>
<th>Advising and Measuring Student</th>
<th>Pedagogical research</th>
<th>Priorities on Teaching Quality</th>
<th>Adequate Student Support Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium Relationship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Week Relationship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 2: Quality Function Deployment (QFD) of Higher Education in Bangladesh**
Summary and Conclusion:

A survey was conducted among faculty members of higher education institutions of Bangladesh in order to identify the areas requiring improvement for enhancing the quality of higher education. The thirty-question survey was divided into four sections: curriculum, assessment, faculty involvement, and administrative support towards quality improvement. The survey findings revealed several critical areas of improvement. The first area of improvement identified was development of course and program objectives that align with the university’s mission. This was followed by the importance of an assessment of the learning outcomes. The third area identified was the lack of knowledge and understanding of faculty and administrators in teaching-learning theories. A critical need for training in this area was demonstrated. QFD technique has been used to identify the areas of improvement and how these can be accomplished.

A number of Higher Education Quality Enhancement Projects (HEQEP) funded by UGC-Bangladesh includes improvements of teaching-learning processes at different universities in Bangladesh. To provide effective training for sustainable improvement of quality requires international experts in pedagogy. There are a number of expatriate Bangladeshi experts who are interested and willing to contribute to quality improvement initiatives in Bangladesh. The current chairman of the University Grant Commission of Bangladesh expressed his interest in providing support to these experts. Other universities in Bangladesh must also take initiatives to arrange workshops and training by these experts on the teaching and learning process. Defining a common understanding of quality of higher education and establishing an improved knowledge and understanding of pedagogy can play a critical role in the higher education quality improvement initiatives of Bangladesh.

References:


APPENDIX: Survey Questions

Q1 The most important element in higher education quality improvement in Bangladesh is development and/or improvement of curriculum.

Q2 The mission and objective of the academic program aligns with the mission and vision of the university

Q3 It is important to define program objective and mission that aligns with the university mission and vision

Q4 The goals and objectives of the academic program are clearly defined and each faculty is familiar with the program goal and objective

Q5 Each course in the program has well-defined objectives and student learning outcomes

Q6 The program objectives and learning outcomes are mapped with course objectives and learning outcomes using curriculum mapping

Q7 Course material is aimed at development of critical thinking skill development of students

Q8 Subject matter memorization is an important aspect of students’ academic success

Q9 It is important to conduct program review and assessment in every five years to update the program and continuously improve quality of academic program

Q10 The program review and assessment is conducted frequently (every five years) to update program goals and objectives

Q11 It is important to assess student learning outcome in each course to determine learning effectiveness of the course

Q12 Student learning outcomes are assessed frequently in each course to determine learning effectiveness in the course

Q13 The results of students learning outcome is used regularly to update or modify the course, curriculum and program

Q14 Professors have good knowledge and understanding of pedagogy (teaching and learning theories)

Q15 Professors have clear understanding of program objective, course objective and student learning outcomes
Q16 Professors regularly participate and spend time on developing strategies and techniques to improve student learning.

Q17 Professors are interested and willing to assess student learning in their own classroom and use the assessment data to improve the course topic and teaching methodology.

Q18 Professors and administrators are knowledgeable in accreditation standards of higher education in their own discipline.

Q19 Professors and administrators are knowledgeable in curriculum mapping to understand how each course in the curriculum contributes in meeting program goals and objectives.

Q20 Professors understand that different learning styles exist among students and tailor instructions accordingly. Or Professors use audio/video, projects, team-based assignments, seminars, and other instructional aides apart from regular lectures to teach subject matter to the students.

Q21 Professors are familiar with “Metacognition” tools and strategies that can be used to improve students’ academic performance and confidence level.

Q22 Professors require training in the area of pedagogy to improve understanding of teaching and learning methodology that is essential to quality improvement.

Q23 The university administration encourages and provides support to faculty members to improve quality of higher education.

Q24 University administration provides incentives to faculty to improve course, curriculum, and program towards higher quality.

Q25 The university administration provides training and workshop to faculty members to become effective teachers.

Q26 The university administration encourages faculty members to mentor students and motivate students to learn at a higher level.

Q27 The university administration encourages pedagogical research to improve faculty expertise in the areas of teaching and learning.

Q28 The university administration values quality of student and quality of instruction as their highest priority.

Q29 The university administration provides full academic freedom to faculty in grading and managing student performance.

Q30 The university administration provides adequate support services (tutoring center, extracurricular activities, special remedial class, scholarships) towards student success.