

Reprint

ISSN 1997-2571 (Web Version)

Journal of Innovation & Development Strategy (JIDS)

(*J. Innov. Dev. Strategy*)

Volume: 6

Issue: 2

December 2012

J. Innov. Dev. Strategy 6(2):77-82(December 2012)

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JIDS** issn 1997-2571, HQ:19-10 central place, saskatoon, saskatchewan, s7n 2s2, Canada

LIMITATIONS OF THE CURRICULA OF THE GRADUATION LEVEL TEXTILE EDUCATION IN BANGLADESH

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Accepted for publication on 22 November 2012

ABSTRACT

Azad AKMF, Hossain M, Khalifa A (2012) Limitations of the curricula of the graduation level textile education in Bangladesh. *J. Innov. Dev. Strategy. 6(2), 77-82.*

Studies were conducted on the Curriculum related Problems of Graduate Textile Education with the objectives of knowing the curricular status and its operational mechanisms. The research works were conducted through a questionnaire involving beneficiaries, operators and stakeholders. The methods used were direct survey, Focus Group Discussion (FGD), and conducting case studies integrating lower and upper level institutes. The sample population was taken from the Textile Engineering and Technology Colleges and Universities. The respondent groups consisted teachers, instructors, officials and students. The results obtained on the integrations of the vocational, diploma and graduate course-semester matrix showed significant deviations varying the compliance from 23 to 72 per cent. from the standards of education philosophy. The results on Comparative Curricular features showed that the curricular quality varied significantly among vocational, diploma and graduate levels, the diploma level being slightly better. It is recommended that the curricula of the graduation level Textile Education in Bangladesh that the in vertical and parallel linkage of the courses, subjects and syllabus were very weak. Practical classes needed to be enhanced adding more technical contents. Availability of appropriate teachers having good experiences of the vocational and diploma education competencies should be increased Participation of all the actors of the curriculum including Faculties and Industrialist, key business hub controllers including abroad professionals and firms must be ensured making it in-built in the curriculum. The syllabus of 2nd and 3rd year for the graduate core credits should be revised. The curriculum structure should be as of National Curriculum and Textbook Board (NCTB), MOE.GOB, Ministry of Education and Youth and Agriculture. There should be one Curriculum Director controlling curricular operations, monitoring and evaluation in the dynamic process of improving the education system.

Key words: graduate textile education, tpr, modular curricular integration

INTRODUCTION

Clothing is the second basic need of the human. Human being can live or survive for some days without foods or the other basic needs, but it is quite impossible and even unimaginable to be without clothing in this civilized society. From cradle to the grave-yard the only thing is essential that is clothing.

The history of clothing industry i.e. textile sector is very rich for our country. Still we feel proud for our MOSLIN. But for technical deficiency we were been thrown out from this trend though one of the textile product 'Jute' was only the source of light in the dark hole. But due to the invention of different synthetic and artificial micro fibers the jute market started loosing which has been stated to be a global invasion to Bangladesh textile industry reducing scope of respective vocational education (O'Connor and Trussell, 1987; Shields 1989). However, with the consciousness of the environment jute market is again going to be alive.

From the last three decades another textile sector, garment industry has strongly emerged. We are now earning about 86% of total foreign currency from this area. But we are lacking for sound technically know how person. To overcome this problem Ministry of Textiles & Jute started three levels of textile education in Bangladesh. They are: i) Bachelor Degree Engineering course (1978) for producing executive level of technical person; ii) Diploma Engineering course (1999) for producing mid level technicians; iii) Vocational/ Certificate level (1995) for producing skilled worker. Besides government institutions there are many private universities are also awarding Bachelor Degree & Diploma in Textile Engineering. But there are some differences in their syllabus & curriculum. In my present research I have tried to find out the anomalies & their solutions in the Bachelor level of Textile Education.

Education systems in Textile Sector

Achilles *et al.* (1989) reported that the textile industry is in a period of rapid and revolutionary modernization and automation in Bangladesh. The engineers graduated in Textile Engineering are equipped with the knowledge of the behavior of textile materials and the functions of machinery in textile and clothing technologies. Similar statements were also made by Reeves (2006) while working with Textile education in the developing countries. Textile Engineering deals with the application of scientific and engineering principles to the design and control of all aspects of fiber, textile, and apparel processes, products, and machinery.

These include natural and man-made materials, interaction of materials with machines, safety and health, energy conservation, and waste and pollution control.

There are several Textile Institutes in Bangladesh. They are:

1. Textile Vocational Institutes (TVI): There are now 40 TVI under DOT, in different districts in Bangladesh. The eligibilities of the students are JSC i.e. class VIII pass. The syllabus & curriculum is controlled by BTEB.

2. Textile Institutes: Formerly these were named as Institute of Textile Engineering & Technology (ITET). The eligibility of the students are SSC. Now, there are 6 (Six) textile institute, they are: Textile Institutes one each of Pabna, Noakhali (Begumganj), Barisal.

Chittagong (Zorarganj), Tangail (Bazitpur Road), and Dinajpur. More four textile institutes are going to be established within 2013 under the administration of Department of Textiles(DOT). Besides the government textile institutes there are more than 100 Private Textile Institutes. The syllabus and curriculum of both government and private textile institutes were stated to be same and controlled by Bangladesh Technical Education Board (BTEB). Admission eligibility of the students is SSC.

3. Textile Engineering College: The pioneer of this type is the Textile Engineering College at Tejgaon, Dhaka which was established 1978, under the Ministry of Education. It has already been upgraded to Bangladesh University of Textiles (BUTEX) in 2010. Among the Textile Institutes under DOT the Textile Institutes of Chittagong (2006), Pabna (2007), Noakhali (2007) and Barisal (2010) have already been upgraded to Textile Engineering Colleges. One more Textile Engineering College is going to be established at Jhenaida within next few years. The syllabus and curriculum is now controlled by different public Universities. But from 2012 this will be controlled centrally by Bangladesh University of Textile. Besides these, Bangabandhu Textile Engineering College, Kalihati, Tangail under DOT and Dhaka University of Engineering and Technology (DUET) is awarding B. Sc in Textile Engineering to the Diploma holders.

There are several private universities which are also awarding B. Sc in Textile Engineering degree. Eligibility of the students are HSC in science group. The major Departments are Yarn Manufacturing Technology, Fabric Manufacturing Technology, Wet Processing Technology, and Clothing Technology.

Career chain: They are employed in departments of textile plants and companies varying from small to big scale, i.e., production, planning, quality control, sales or marketing or in agencies of domestic or foreign companies for textile products and textile machinery, concentrated in different regions of the country. The academic chain may start from vocational to post graduate level within service. The major avenue based designations are: Process Engineer, Quality Control Supervisor, Technical Services Managers, Operation Trainer, Process Improvement Engineer, Medical Textiles Engineer, and so on.

Academics: B. Sc in Textile Engineering is 4 year long program. The final and the midterm exams of each year is conducted under the supervision of Bangladesh University of Textile. All the exams question, answer script checking and final results are published by the respective authorities. Beside this each student has to attend the regular class test, quiz test and project and comprehensive viva. After the successful completion, a student will receive a bachelor degree certificate. The Admission procedure starts after the HSC results. Students have to follow the admission announcement which is given by the affiliating Authority. Usually the admission procedure starts after August once in each year. Admission criteria include minimum HSC/Equivalent Passed, Minimum GPA 3.5 and 4.0 GP on Physics, Chemistry and Mathematics.

In the context as the education system has several option in term of administration, courses, admission requirement, and curriculum and syllabus monitoring process including examinations and carrier choices and scopes, it was thought that research works should be conducted on so that it can flourish in future with more specific commitments for the country. Thus the current research program was formulated to have answers on the vital points basing on the major objectives such as: i. to know the status of textile education compared to graduation level in Bangladesh, ii. to assess the curricular development stage of graduate level textile education integrated with other levels, and iii. to identify the problems of Graduate Textile Degree of Bangladesh.

MATERIALS AND METHODS

The Methods and Materials used were i. Direct survey through a questionnaire, Focus Group Discussion (FGD), and conducting case studies proofing individual institute. The research and questionnaire structure is given in Table 1. The suggestions and recommendations of Silberman (1996) were considered in detail while formulating the methods and materials of the studies.

Sampling population: The sample population was Textile Engineering and Technology College and Univ- 20 and Number of respondents-160.

Respondent groups: the respondent groups were Teachers/Instructors-90, Academic Administration-30, and Students-40.

Table 1. The research and questionnaire structure

Questionnaire Guideline	
Persons having experience of >1 courses from certificate to post graduation will be given preference.	Questionnaire structure
A. Characteristics of the respondent	B. Questions: Response as Good-Medium-Poor
Personal parameters 1. Name..... 2. Courses passed: Voc/ Diploma/ Graduation 3. Designation..... 4. Age..... 5. Address..... 6. Qualification..... 7. Experience..... 8. Have training on curriculum... 9. Have training on education..... 10 Others	Question 1. What is the current status of curriculum in Bangladesh? i. Textile Vocational Curriculum Curriculum process as written: Implementation status: ii. Textile Diploma Curriculum Curriculum process as written: Implementation status: iii. Textile Graduate Curriculum Curriculum process as written: Implementation status: Question 2. Which of the following curriculum is comparatively better? Question 3. Which syllabus is comparatively better? Textile Vocational/Diploma/Graduate Curriculum Question 4. Which of the following courses have laboratories/workshops? Textile Vocational Curriculum Curriculum process as written: Implementation status: ii. Textile Diploma Curriculum Curriculum process as written: Implementation status: iii. Textile Graduate Curriculum Curriculum process as written: Implementation status: Question 5. Which of the following have exams? i. Textile Vocational Curriculum Curriculum process as written: Implementation status: ii. Textile Diploma Curriculum Curriculum process as written: Implementation status: iii. Textile Graduate Curriculum Curriculum process as written: Implementation status:

RESULTS AND DISCUSSION

The major results of the research work conducted here are mentioned here in both tabular and graphical forms after analysis. Side by side interpretations of the results are also described to find out focus conclusions. The results are presented sequentially as Curricular Status and Problem solutions.

Curricular Status

The main curriculum and syllabus of the Graduate Education are studied and reported in the forms of:

Semesters: I, II, III, IV, V, VI, VII, and VIII+

Evaluation- Examinations and others

The courses categorized for the studies were i. Core Courses, ii, Optional Courses, iii. Basic Science Courses, iv. Language Courses, and v. Supplementary Courses. The results given in the Table 2 and the Fig. 1 showed large variations among the courses and its semester wise distributions. The integrations of the course-semester matrix showed significant deviations from the standards of education philosophy. The results show that core course demanded change in the 3rd, 4th and 6th semesters. The optional and basic science course required major changes in the 4th and 5th semesters.

Table 2. Course –Semester Matrix showing the change need

Graduation	S e m e s t e r s								Total
	1	2	3	4	5	6	7	8	
Core Courses	33	54	69	67	51	72	40	38	53
Optional Courses	32	27	49	56	58	46	57	31	45
Basic Science	27	31	34	66	70	55	25	21	41
Language Courses	49	59	33	42	28	22	34	31	37
Supplementary	25	23	32	34	41	52	43	48	37
Mean	33	39	43	53	50	49	40	34	43

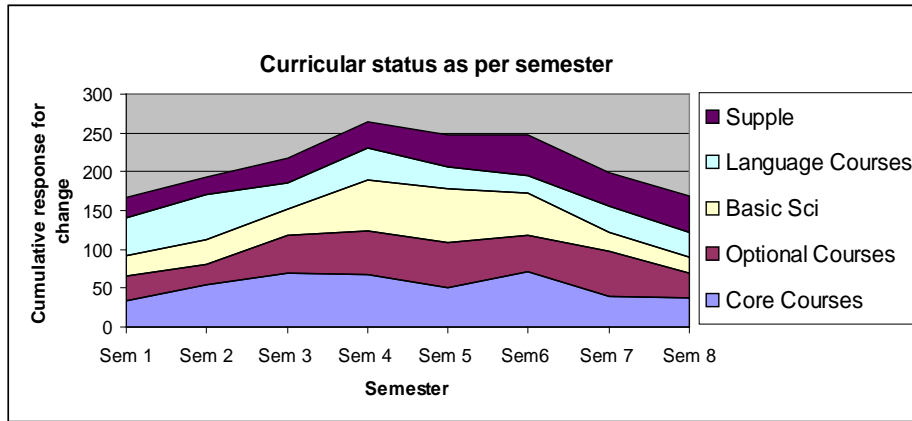


Fig. 1. Curricular Status of Graduate Textile Education as per semesters

The results of the Curricular Status given in the Fig. 1 showed that the parallel distribution of the courses throughout the duration of the study was not well-adjusted indicating that the curricular status is not academically integrated. The present curriculum is seriously loaded at the mid stage being about 45%, the initial and final proportions being 25 and 30% only. It means very fewer interactions were made during preparation of the curriculum in a even non-modular approach system in some cases. The deviations were mainly found in the mid semesters which may be due to the factor that it is still at initial stage.

Curricular Status as per Courses

The results obtained on the courses and disciplinary subjects as to express the Curricular Status given in the Fig. 2 showed that the intra course subject distribution throughout the study was not well-linked as per its academic requirement is concerned. It revealed that the curricular status does not reflects its vertical comprehensiveness. It shows that very less methodological interactions were performed during preparation of the curriculum and the syllabus.

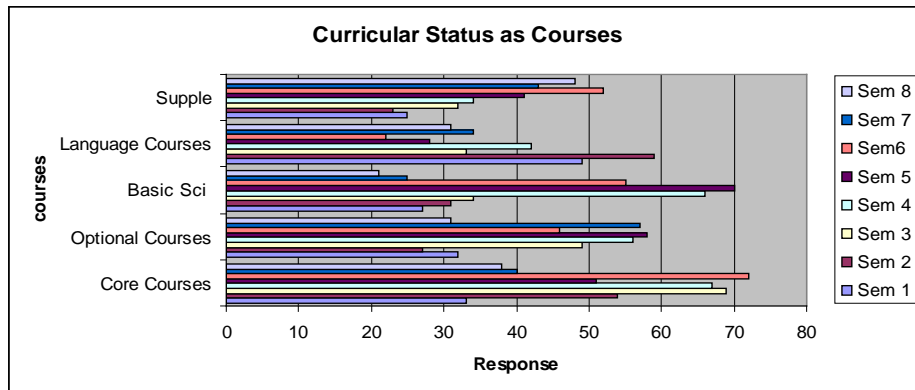


Fig. 2. Curricular Status of Graduate Textile Education as per courses

Curricular Deviations Needing Changes

The results obtained on the Comparative Curricular features given in the Fig. 3 show that the course content as to curricular quality varied significantly among vocational, diploma and graduate levels, the diploma level being slightly better.

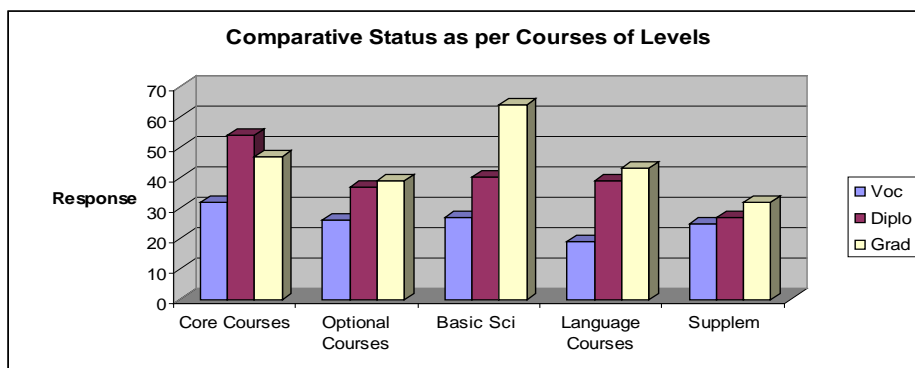


Fig. 3. Curricular deviations needing changes

Among the courses the basic and language subjects were found to be more weak as regards students competency required for higher degree.

The results show that all respondents were aware of the deficiencies of the curriculum and syllabus both on written papers and its implementation status. There are so many anomalies were also found in the optional/supplementary courses at the later and early semesters respectively as induced by the individual teachers.

Feature based Qualities

The characteristic features of the curriculum at 3 level starting from vocational to graduate level are mentioned in the Fig. 4 in percent units. The responses given in terms comparisons for curriculum changes as given in the pie chart here show that Diploma level curriculum scored 41% as highest. The results given in on the features of the curriculum in percentage form show that less than 35% were in the satisfactory grade which is inadequate according to even Asian standards (India- >60%). It should be treated as major sector for improvement in our newly emerging Textile Education which were previously recommended by Brodhead (1991) for less developed countries having potentials for small scale industries.

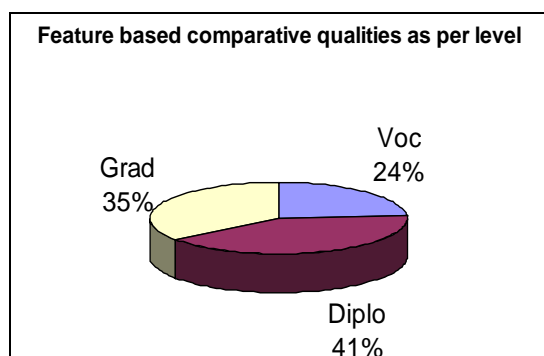


Fig. 4. Feature based Qualities as per 3 levels

The courses needing revision were found to be 13-26% for additional courses as highest. But the deviations of the courses in the core subjects were found to be more important for quality education which follow the findings of Tuttle (1987) as fit with the needs of Bangladesh.

Quality of education

The features of the curriculum studied as per its quality were measured in the forms of status, objectives, syllabus, theoretical and practical ratios and evaluation systems. The results show that (Table 3 to 5) the objectives was satisfactory, but other parameters of operation or implementation as mentioned here were found to be mostly poor. These findings support the previous statements given by OECD (2006) by Korean educationists as regards quality of education.

Table 3. Comparative curricular characteristics as per written documents evaluation scores

Course categories	Voc	Diploma	Grad	Mean
Core Courses	32	54	47	44
Optional Courses	26	37	39	34
Basic Science Courses	27	40	64	44
Language Courses	19	39	43	34
Supplementary Courses	25	27	32	28
Mean	25.8	39.4	45	37

Comparative features: Implementations: Respondent's score

Table 4. Comparative curricular characteristics as per implementation scores

Semesters/ Courses	Vocational	Diploma	Graduation
Core Courses	31	57	45
Optional Courses	21	38	34
Basic Science Courses	27	41	24
Language Courses	22	35	46
Supplementary Courses	22	29	38

Table 5. Per cent responses as good and partially medium

	Written				Implementation				Total mean
	Vocational	Diploma	Graduation	Mean	Vocational	Diploma	Graduation	Mean	
Laboratory	23	22	31	25	17	22	26	22	27
Workshops	33	37	24	31	21	27	23	24	28
Curriculum existence	37	48	35	40	30	38	32	33	41
Syllabus	46	52	49	49	35	47	44	42	46
Eval	52	61	53	55	32	23	41	32	44
Mean	38	44	38	40	27	31	33	31	36

CONCLUSION

It may be concluded from the present studies on limitations of the curricula of the graduation level Textile Education in Bangladesh that the in vertical and parallel linkage of the courses, subjects and syllabus were very weak. Theoretical: Practical Ratio (TPR) need to be enhanced removing the shortage of technicality of the contents. The Theory and Practical class/credits/periods must be specified in the credit courses as per objectives and syllabi of the total textile education avoiding duplications, and should be examined in practical work based format including project formatted works. Availability of appropriate teachers having good experiences of the vocational and diploma education competencies as per objective of the total textile education system should be increased along with increasing facilities for e-libraries and excursions. Examination items on experiments, business administration firm work experiences should be strengthened. Participation of all the actors of the curriculum including Faculties and Industrialist, key business hubs including abroad professionals and firms must be ensured making it in-built in the curriculum and subject syllabi. The syllabus of 2nd and 3rd year for the core subject credits preferably be revised for increasing credibility of the graduates for higher knowledge and skills as per employers and financers requirements. The whole curriculum should be in a modular format as per national policy led by National Curriculum and Textbook Board (NCTB), MOE.GOB, Ministry of Youth and Agriculture. There should be one strong Curriculum section in each faculty.

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