Chapter Four
Research Methodology

4.0 Introduction

The second and third chapters have adequately addressed the related review of literature and the theoretical underpinnings providing further insights into the study and helped the researcher identify the appropriate tools for his present study. Hence this chapter primarily focuses on the research design of the study and throws light on the population, sample, instruments for data collection employed in this research in detail.

4.1 Scope and Method of the Study

The present study attempts to assess the current English language teaching-learning practices prevalent in all Government Engineering Universities of Bangladesh. In a bid to carry out the study, the researcher primarily elicits data in the form of perceptions and opinions from students on various issues and components related to English curriculum such as English syllabus, evaluation system, teaching materials and methods of teaching, their attitude and motivation towards learning English.

Apart from students, the perceptions of English teachers are also taken into account. In addition, the researcher has exploited other potential sources of information like in-service engineers and HR personnel. The researcher has also studied the curriculum documents such as English syllabus and semester-end examination question papers to draw further insights on the whole teaching-learning enterprise.
In the following section, the population, sample and the instruments for data collection have been discussed in detail.

4.2 Population

Various types of population considered for this study are students and English teachers in the engineering universities, in-service engineers working in various private and government organizations and HR personnel who are in charge of recruitment of these engineering graduates in various national corporate organizations and MNCs. The following section discusses the students’ population and samples.

4.2.1 Students’ population

In case of students, the population of the study comprises of the whole set of engineering students from various branches in the five government engineering universities of Bangladesh. They have been characterized in terms of locality e.g. urban or rural, educational background/ level of education, (e.g. whether Diploma/ XII), age, type of institutes (e.g. whether the intakes come from XII or Diploma background). The researcher has chosen the target population with such versatile features so that this sample can adequately represent the true picture of the whole country.

4.2.2 Teachers’ Population

Similarly in case of teachers, the population consists of all the English teachers in these engineering universities of Bangladesh. The teachers’ population has been characterized by the level of higher education (e.g. MA, M Phil, PHD etc.), length of teaching experience,
background of secondary education (e.g. science or arts), respective courses they undertake, any other professional training, experience related to their profession etc.

4.3 Sample of the Study

This section discusses the sampling plan for this present study comprising of students, teachers, HR personnel and in-service engineers. The sample of this study has been described in terms of the organization and participants of those organizations. The researcher has also taken part in administering some of the tools such as classroom observation and studying and analyzing curriculum-document such as syllabus and semester-end question paper. In this context, the researcher is a non-participatory agent in the sense that he is involved in observation but not in the instructional process. Following is the summary of sample size:

- No of Students’ sample 379
- No of Teachers’ sample 11
- No of Teachers’ sample for interview 10
- No of HR personnel 05
- No of In-service engineers 05

The characteristics of the above-mentioned samples are detailed below.

4.3.1 Students’ Sample

Almost all the engineering universities of Bangladesh have the same entry requirements for admission into B. Sc. in engineering program. The students’ sample is selected from five
Government engineering universities of Bangladesh. Most of these samples are between 19-21 years of age with a few from urban and majority from rural background. Mostly they come from the educational institutions where medium of instruction is Bengali (L1). The table below demonstrates the whole set of students’ sample size i.e. 379. The following table presents the distribution of samples in terms of universities, semesters and branches.

**Table- (03) Summary of the Students’ sample**

<table>
<thead>
<tr>
<th>University</th>
<th>N</th>
<th>%</th>
<th>Branch</th>
<th>N</th>
<th>%</th>
<th>Semester</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUET</td>
<td>85</td>
<td>22.0</td>
<td>CSE</td>
<td>83</td>
<td>21.5</td>
<td>First</td>
<td>162</td>
<td>42.0</td>
</tr>
<tr>
<td>BUET</td>
<td>27</td>
<td>7.0</td>
<td>CIVIL</td>
<td>111</td>
<td>28.8</td>
<td>Second</td>
<td>62</td>
<td>16.1</td>
</tr>
<tr>
<td>RUET</td>
<td>101</td>
<td>26.2</td>
<td>CHEM</td>
<td>27</td>
<td>7.0</td>
<td>Third</td>
<td>133</td>
<td>34.5</td>
</tr>
<tr>
<td>KUET</td>
<td>61</td>
<td>15.8</td>
<td>EEE</td>
<td>58</td>
<td>15.0</td>
<td>Fourth</td>
<td>1</td>
<td>.3</td>
</tr>
<tr>
<td>DUET</td>
<td>105</td>
<td>27.2</td>
<td>MECH</td>
<td>50</td>
<td>13.0</td>
<td>Fifth</td>
<td>18</td>
<td>4.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>IPE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>7.0</td>
<td></td>
<td>3</td>
<td>.8</td>
<td>Seventh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>379</td>
<td>100</td>
<td>Total</td>
<td>23</td>
<td>6.0</td>
<td>Total</td>
<td>379</td>
<td>98.2</td>
</tr>
</tbody>
</table>

The students’ sample size is 379. All these samples potentially represent various branches of engineering and technology such as CSE, Civil, Chemical, EEE, Mechanical and IPE. Besides, the sample also represents the students across 1st to 7th semesters in the engineering programme. As the size of intakes varies across branches, the number of sample drawn from various branches for this study also varies. The students from Civil engineering branch represent with the highest 28.8% in this study whereas 42% students’
sample has represented from the first year first semester in contrast to 1 (0.3%) sample from fourth year.

4.3.2 Teachers’ Sample

Teachers are recruited in these engineering universities of Bangladesh under an indifferent recruitment policy i.e. first class all through in the candidates’ academic life. Of course, prior experience in teaching at tertiary level in government or autonomous sector is always considered as an additional qualification for the candidates. The number of teachers’ sample for this study is 11 as this is the size of English teachers’ sample available in these engineering universities. However, interview has been conducted only with 10 teachers. Most of the teachers participated in this study have a similar length of experience i.e. between 3-5 years. Only two ESP teachers have been teaching in the same institution for more than 10 years or so. Besides, these teachers are mostly from literature background as there was no ELT/ELE/ TESOL education in the early 90s. In fact, ELE/ ELT at the undergraduate and post graduate level has started in Bangladesh only after 2000, that too, in very few universities. Hence these English teachers have been asked to take part in the questionnaire, interviews and classroom observation.

4.3.3 Sample of In-service Engineers

The researcher has chosen in-service engineers as sample for this study due to their experience with the English pedagogy that they have been imparted. Thus, the feedback from this set of samples would be quite useful for the study. Hence the researcher has chosen five in-service engineers from different private and Government organizations in Bangladesh.
4.3.4 Sample of HR Personnel from the Industry

Human resource is the Department in any organization that is responsible for recruitment and any other procedure connected to it. Therefore, the researcher involved five HR personnel from different industries to know the recruitment procedures and in-service training facilities. This data helped in validating the study further.

4.4 Universities as Research Sites

There are around five government engineering universities along with more than 50 private universities offering many engineering program in Bangladesh. Apart from these, at least 15 universities of science and technology offer various courses and programmes in the field of engineering. Since the researcher has already mentioned that the present study encompasses only the government engineering universities of Bangladesh, the sample for this study includes these five government engineering universities. They mostly offer B. Sc, M. Sc. and PhD programs in the field of various specialized engineering disciplines. These universities offer undergraduate and post-graduate degree in the programs such as Electrical and Electronic Engineering (EEE), Mechanical Engineering (ME), Civil Engineering (CE), Computer Science and Engineering (CSE), Architecture (ARCH), Industrial Production and Engineering (IPE), Chemical Engineering (ChE), Textile Engineering (TE) and Urban Development and Engineering (UDE). These universities are named as Bangladesh University of Engineering & Technology (BUET), Dhaka University of Engineering & Technology (DUET), Rajshahi University of Engineering & Technology (RUET), Chittagong University of Engineering & Technology (CUET) and Khulna University of Engineering & Technology (KUET). BUET was established in 1948 in the
centre of the present capital of Bangladesh, and was named after Bangladesh as there was no other technical institution for higher education except this one in this part of the region. The rest of the four universities have been established after independence of Bangladesh and are located in four major divisions that Bangladesh is comprised of. Besides, these research sites are mostly located in and around the four metropolises. Hence these five engineering universities are scattered and located in such a way that the kind of information elicited from these sites would potentially represent the whole country.

Since the researcher has chosen all the government engineering universities, he uses random and convenient sampling technique to collect data from the various branches of engineering covering different year/semesters so that their range of expectation as well as experiences vary. The study has included the departments/branches and semesters in such a way that it truly represents and increases the reliability of the study as well.

Since the needs of various branches of engineering are different, the respective syllabus in these universities should also be different. However, all the branches in these universities either offer “English” or “English Language Practice (lab)” or both as part of their syllabus at the undergraduate level. Since these universities are fully autonomous, they have the freedom to offer these courses either at first or second semester or second year first semester as well. After second year first semester, there is no English course offered to these students. Hence there is no homogeneity in offering these courses among these universities which means depending on the course arrangements; these universities offer these courses in different semesters in different universities. The engineering Departments play a huge monopoly by not offering required number of English courses as they do not
consider English, as important as the engineering courses. The detailed syllabus booklet contains a few English courses but the Department usually does not offer more than one course so as to give more space for engineering courses. There are many Departments which offer only 1.5 credits (i.e. one and a half hour class duration per week) instead of offering 3 credits which is the trend in most other universities. Besides, many Departments do not offer the English lab course due to their negative attitude towards English subject.

The details of the engineering universities visited as their institutional name, the student population and number of students selected for the study and their geographical location are tabulated below. The student population represents the total number of students admitted in different branches of the universities who have either English or English laboratory course or both as their elective subject/s. Number of students selected for the study potentially represents the total number of students from each branch who participated in the administration of the questionnaire. The questionnaires were distributed in theory classes of 60 students and lab class of 35 students as per availability of classes. The students who have abstained from the administration of questionnaire are minimal and different from institution to institution. The following table summarizes the students’ sample in terms of semesters, branches and universities.
### Table- (04) List of Sample Universities with branch wise samples

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Name of University</th>
<th>Student Population</th>
<th>Samples selected</th>
<th>Branch/ Dept.</th>
<th>Urban/ Semi-urban</th>
<th>Division</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>CUET</td>
<td>120</td>
<td>85</td>
<td>Chemical</td>
<td>Semi-urban</td>
<td>Chittagong</td>
<td>02</td>
</tr>
<tr>
<td>02</td>
<td>BUET</td>
<td>120</td>
<td>27</td>
<td>Civil</td>
<td>Urban</td>
<td>Dhaka</td>
<td>02</td>
</tr>
<tr>
<td>03</td>
<td>RUET</td>
<td>120</td>
<td>57</td>
<td>EEE</td>
<td>Urban</td>
<td>Rajshahi</td>
<td>01</td>
</tr>
<tr>
<td>04</td>
<td>RUET</td>
<td>120</td>
<td>44</td>
<td>Civil</td>
<td>Urban</td>
<td>Rajshahi</td>
<td>01</td>
</tr>
<tr>
<td>05</td>
<td>KUET</td>
<td>120</td>
<td>32</td>
<td>Civil</td>
<td>Semi-urban</td>
<td>Khulna</td>
<td>01</td>
</tr>
<tr>
<td>06</td>
<td>KUET</td>
<td>120</td>
<td>29</td>
<td>MECH</td>
<td>Semi-urban</td>
<td>Khulna</td>
<td>01</td>
</tr>
<tr>
<td>07</td>
<td>DUET</td>
<td>30</td>
<td>27</td>
<td>IPE</td>
<td>Urban</td>
<td>Gazipur</td>
<td>03</td>
</tr>
<tr>
<td>08</td>
<td>DUET</td>
<td>30</td>
<td>23</td>
<td>ARCH</td>
<td>Urban</td>
<td>Gazipur</td>
<td>03</td>
</tr>
<tr>
<td>09</td>
<td>DUET</td>
<td>60</td>
<td>34</td>
<td>CSE</td>
<td>Urban</td>
<td>Gazipur</td>
<td>03</td>
</tr>
<tr>
<td>10</td>
<td>DUET</td>
<td>60</td>
<td>18</td>
<td>MECH</td>
<td>Urban</td>
<td>Gazipur</td>
<td>05</td>
</tr>
<tr>
<td>11</td>
<td>DUET</td>
<td>60</td>
<td>03</td>
<td>MECH</td>
<td>Urban</td>
<td>Gazipur</td>
<td>07</td>
</tr>
</tbody>
</table>

#### 4.5 The Role of the Researcher

The researcher has participated in the classroom observation, syllabus and question paper analysis. He has the experiential knowledge of the situation as he himself teaches in the same context for a long time. However, the researcher is not a part of the research sample.
but definitely one of the sources of information. Hence the researcher’s role is of an objective observer.

### 4.6 Instruments of Data Collection

According to Colton and Covert (2007:5) instrument is a “mechanism for measuring phenomena, which is used to gather and record information for assessment, decision making and ultimately understanding.” Based on this definition the researcher identifies instruments of data collection as the different research tools used to obtain required data such as questionnaires, interviews, classroom observation etc. Besides, the researcher has also attempted to analyze the curriculum documents such as syllabus and end-semester question paper.

It has been mentioned that the current study makes use of different research tools and data sources to adequately represent a common set of ELT curriculum and teaching practices in the government engineering universities and the common set of students’ and teachers’ needs to successfully impart ESP instruction to fulfill the goals as marked by the students in their needs analysis, classroom observation and interviews. The following are the various research tools used in this study:

- **(01)** Students’ Questionnaire
- **(02)** Teachers’ Questionnaire
- **(03)** Semi-Structured Interview with Teachers
- **(04)** Semi-Structured Interview with HR Personnel
- **(05)** Semi-Structured Interview with In-service Engineers
- **(06)** Classroom Observation Checklist
- **(07)** Analysis of sample syllabus
Analysis of question paper

Observing the current ELT curriculum and teaching practices, analysing the available content of the collected documents and reviewing the relevant literature has laid down the foundation for building up the content of the questionnaires, interviews with teachers, in-service engineering professionals and recruitment personnel. Based on the feedback from all these stakeholders plus his own active experiences in the same field for more than a decade, the researcher accomplishes the piloting phase via administering questionnaires among students and teachers to have a thorough idea of what the final questionnaire should contain. The samples used for pilot study comprising both the teachers and students are finally excluded from the final administration of the survey and interviews.

4.6.1 Pilot Study

Questionnaires for the students have been piloted with a group of 20 students of various branches. The samples used for pilot phase is not included in the main phase of the administration of the questionnaire. While administering the questionnaire among the students and the teachers, the researcher received valuable insights from the respondents. The students’ questionnaire is then finalized making necessary changes like re-wording, re-phrasing and restructuring the expressions and key terms, keeping in mind the respondents’ difficulty in comprehension along with addition of new items and issues. Little change in the layout is also brought about so that it becomes respondent-friendly to complete. However some words and phrases that seem difficult for the students to comprehend were retained in the final questionnaire due to its ELT value and thus the researcher decides to clarify those terms or phrases to the respondents during the final administration of the
questionnaire wherever necessary. Since the administration of the students’ questionnaire is conducted during the presence of the researcher himself, he has not faced much problem.

However, while administering teachers’ questionnaire, the researcher has not faced any such problem of clarifying the terms and phrases to the teachers during the pilot phase as they are all from English background and have been serving as English teachers in these engineering universities for few years. The structure and length of the teachers’ questionnaire during pilot phase is a bit lengthy and time consuming. Hence few teachers have verbally suggested the researcher to reduce the length of the questionnaire recapitulating the main area of priorities and issues addressed in the research questions of this study. Since most of the ESP teachers have not turned up with pilot draft of questionnaire during first meeting, the researcher had to meet them in person again and finally he received around five filled in questionnaires from teachers. Based on their verbal guidelines and suggestions and from the reflections of their responses, the researcher finally reshaped the teachers’ questionnaire to ensure that no such issues arise during the final administration of teachers’ questionnaire.

Besides, interviews with teachers were set to be semi-structured and mostly informal so as to gather more information about the current ELT teaching practices, methodologies, materials and especially the students’ needs and their expectation from the English class. The interviewee’s teaching experiences and responses has enriched the researcher’s knowledge about the situation. In this way, the pilot study has enriched the researcher’s understanding of the whole situation and helped him to decide on the issues that needed to be accommodated in the final questionnaires and interviews.
4.6.2 Developing the Instruments for Data Collection

Based on the data obtained from the piloting phase, the researcher arrived at using questionnaires, semi-structured interviews and classroom observation checklist as tools for this study. The researcher believes that using all these sources of data will give the true picture of the English teaching learning practices in these engineering universities of Bangladesh.

4.6.3 Validation of Instruments

As part of validation procedure of the proposed data collection tools, the researcher has taken constant suggestion from the research advisory committee assigned to him. Apart from this, he has also taken help from a panel of several professors of ELT from the School of English Language Education (ELE) in the EFL University and has also contacted few experts outside EFLU. Besides, the researcher had parallel sessions with senior research scholars specializing in the same area to have their insights in this connection which also helped him a lot. The researcher received encouraging feedback from all these resource persons that he approached and thus the items in the questionnaires, interviews and classroom observations are modified and reformulated taking their suggestions into consideration. The reliability coefficient alpha 0.745 also shows the internal consistency in case of the students’ data. (Appendix-XI)

Gilbert (2005) emphasizes the effectiveness of using multiple sources and methods to secure the accuracy and validity of obtained results in needs analysis. Each source is incomplete by itself and hence needs to be complemented with others to obtain more
reliable and validated results. He concludes that using multiple methods and sources adds richness to the obtained information. He further remarks “if a variety of methods are not used, questionnaires alone will clearly be capable of obtaining only very limited information” (p. 198).

By using triangulation procedure, the researcher has been able to support his findings and to identify the common themes and patterns in particular responses from the students and teachers. In this way, the researcher has achieved the internal validity of the research tools.

4.6.4 Process of Questionnaire Design

For designing the questionnaire, the researcher has received primary idea about the structure from doctoral dissertation (Sasidharan, 2012). Concepts from the questionnaire have been adapted and modified before final use. The researcher has adopted the structure of this questionnaire as he wanted them to be respondent-friendly format and convenient to administer as well.

4.6.5 Students’ Questionnaire

The main aim of administering a questionnaire for students was to obtain valuable information concerning their own perceptions and opinions on the essential domains of the study such as current English syllabus, teaching methods, materials, evaluation system and the potential gaps between what exactly they want from the university authority and what they receive in reality. All these domains have been taken into consideration as these components truly represent the existing English curriculum and its transactional practices.
The questionnaire for students comprises of 68 close-ended items and one open-ended item in the domain of motivation along with a whole section of open-ended questions for their suggestions to improve the English teaching learning practices in their universities.

The questionnaire begins with brief demographic information comprising of personal information, educational background, regional and geographical background, semesters, branch and name of the university. The demographic information of the respondents is followed by eight different sections as follows:

- **Section-A: Motivation for learning English.** This domain consists of nine items of which eight is close-ended and the last one is open-ended item
- **Section-B: Attitude towards learning English.** This domain comprises of five close-ended items
- **Section-C: Strengths and weaknesses of syllabus.** This domain consists of six close-ended items to address the weaknesses of the existing English syllabus in these engineering universities.
- **Section-D: Teaching methods and learning preferences.** This domain consists of fifteen close ended items addressing various issues related to teaching methods, techniques and students’ learning preferences.
- **Section-E: Teaching materials and input.** This domain comprises of eight close-ended items covering various types of teaching materials and input used in class.
Section-F: Current evaluation system. This domain comprises of five close-ended items dealing with various issues related to evaluation and examination system in their universities.

Section-G: The gap between what the students’ needs and what the university actually provides. This domain consists of twenty one close ended items presented in the form paradigmatic table for two different opinions on various types of academic and professional needs.

Section-H: The last domain is an open-ended item. This domain aims to draw suggestions and opinions of the students in their own words. This domain addresses issues like continuation of English for further semester, their preference for EGP or ESP course and strengthening of laboratory courses, types of skills to be given emphasis on etc. This section has given the respondents full freedom to contribute with their opinions and suggestions in this regard.

To ensure optimal accuracy, the researcher has been constantly offering clarification to avoid confusion about the terms used in the questionnaire while administering in the classroom. Students’ questionnaire is attached in Appendix-I.

4.6.5.1 Administration of the Students’ Questionnaire

After fine tuning the students’ questionnaire in its final shape, the researcher has personally contacted the Heads of the Department (HOD) and the English faculties of Humanities and Social Sciences (HSS) Department over telephone as English is part of this Multi-disciplinary Department and has mutually decided a date of appointment for at least two
full-day sessions for administering both the students’ and teachers’ questionnaires, semi-structured interview and classroom observation. However the time and date of appointment has been decided based on their preference so that their examination and class schedule are not hampered. Besides, he has also requested the HODs to ensure that the English faculties are in spare during these two days; so that he can take their assistance and elicit data from them as well. Hence the administration of the questionnaires took place in May-July during the academic year (2013-2014) covering these five government engineering universities.

On the day of administration of the questionnaire, the researcher took charge of the respective class session assigned to him. Both the class teacher and the researcher were present while conducting the questionnaire. Before conducting the questionnaire, the researcher addressed the class briefly about the main objective of this study and the conducting of the questionnaire which was ultimately going to benefit them. Since the researcher has been working for more than a decade in the same context, it was not very difficult to motivate the learners in successfully fulfilling the questionnaire. Then the printed copies of the students’ questionnaires were distributed as per the number of students. Besides, the researcher ensured that everyone got enough time to return the filled-in questionnaire. However he did not allow the students to take the questionnaire to their home as the researcher anticipated that in that case the chance of getting back the filled-in questionnaire would be very less. The students were also informed that if there was any doubt on any term as such, they could use L1 to ask for the meaning. While the learners were completing the questionnaires, both the researcher and the teacher moved around the class to make sure that inconsistency in the completion of the questionnaire could be avoided. The 68 close-ended items and one section on open-ended one took almost 100-120
minutes for all students to complete. In this way, the researcher has administered the same questionnaire for another set of students in the afternoon of the same day. The questionnaire was followed by interviews that have given lots of input to the researcher. On the second day in the research site, the researcher conducted two sessions on classroom observation (which would be discussed later) with the same group of students; one in the morning and the other in the afternoon session. In this manner, the researcher has completed administering the questionnaire among 400 (approx.) students representing various disciplines from aforementioned five engineering universities in Bangladesh. After administering the survey, the researcher along with his supervisor screened all the questionnaires to find out whether there was any questionnaire to be rejected. Finally around 21 questionnaires have been rejected due to the lack of validity. Hence the researcher has managed 379 valid questionnaires. Since female participants were found less compared to the male counterparts in number, the researcher has decided to ignore the gender issue as a variable in this study.

4.6.5.2 Process of analysis and interpretation of the data

Since almost all the 68 close-ended items in students’ questionnaire have appeared in the same structure- either the five point Liker Scale “Agree-5 to Disagree-1” or in the “Always-5 to never-1”, data have been tabulated into SPSS program to analyse using descriptive statistics keeping the nature of research questions and data structure in mind. Since this current study is explorative in nature, the study has employed the necessary statistical tests such as frequency, percentage, Chi-square, T-test in SPSS to suit the data and the research questions. The open-ended items in the questionnaire have been analyzed and interpreted
qualitatively using thick description in the form of text to discover a common pattern to address the research questions. Finally he triangulates the findings from various sources such as students’ questionnaire, teachers’ questionnaire, observation checklist and semi-structured interviews with various resource persons, and analyzes the sample syllabus and examination paper to address the research questions.

4.6.6 Teachers’ Questionnaire

The researcher has also developed teachers’ questionnaire for a sample of 11 English teachers who have been teaching English language (both theory and laboratory English courses) in these five engineering universities of Bangladesh. In this connection, it must be mentioned that this is the total number of full time English teachers teaching in these universities. The teachers’ questionnaire (Appendix-II) aims at collecting both quantitative and qualitative data regarding the English curriculum transaction practices that have been adopted by the English teachers of engineering universities.

The teachers’ questionnaire aims at eliciting information regarding the existing syllabus design, teaching methods and practices, teaching materials, teachers’ professional development and identifying different needs (academic and professional) of engineering learners especially from teachers’ perspectives. The teachers’ questionnaire, apart from the demographic one, comprises of six sections which are detailed in the next section.
4.6.6.1 Developing the Teachers’ Questionnaire

As it has already been mentioned in the pilot study, the researcher fine-tuned the teachers’ questionnaire as well based on the results of the pilot study. Hence finally the teachers’ questionnaire has been constructed in six sections apart from the demographic one.

The demographic section contains both the personal and professional details of the teachers. It includes their educational background, name of the institution they are working in, educational qualifications and length of experience in teaching English.

The first section of teachers’ questionnaire comprises of twenty two statements where teachers have been asked to fill in the blank space provided next to the statements by choosing a number from the Likert scale provided in the brackets in the form of 1-never, 2-seldom, 3-sometimes, 4-often and 5-always. The statements intend to find out how often teachers conduct those activities in the pedagogical context.

The second section consists of twenty four different statements reflecting the pedagogical needs of both the teachers and the students. This section attempts to elicit the opinion of teachers to ascertain how far the students’ pedagogical needs have been considered important from the teachers’ point of view. They have been asked to mark their views on a Likert scale of 1-strongly disagree, 2- disagree, 3-no comment, 4-agree and 5- strongly agree.

The third section comprises of eight different ‘Yes or No’ type statements followed by open-ended explanations in the form of reasons. Hence this section has addressed both the
close-ended questions (Yes/ No) generating quantitative response and describing their reasons in the form of texts generating qualitative data.

The fourth section includes one open-ended question seeking list of five major learning needs that motivate the students of their university for learning English as perceived by them. Teachers have been asked to share their perceptions based on their experience in the space provided below each question.

The fifth section has been designed as open-ended item to ask the teachers to list five major weaknesses in their students based on their teaching experience. This item has been asked to obtain data from the teachers’ point of view on students’ areas of weakness.

In the sixth section, the teachers have been asked to list major areas of changes and modifications required in the English teaching learning enterprise and syllabus for government engineering universities of Bangladesh.

4.6.6.2 Administrating the Teachers’ Questionnaire

The administration of the teachers’ and students’ questionnaire took place around the same time. In each of the five engineering universities, the researcher has taken prior appointment for two consecutive days with the English faculties. On the first day, the researcher administered the students’ questionnaire and distributed the teachers’ questionnaire meeting the teachers in person and requested them to return it the next day. Hence he receives the teachers’ response on his second day of visit to each engineering university.
In this manner, the researcher has completed administering both the students’ and teachers’ questionnaires in all the five engineering universities of Bangladesh. Since only two female English teachers were part of the sample, the researcher decided to ignore the gender issue in his study.

4.6.7 Interviews

The use of interview is widely reported in conducting needs analysis in ESP (Long, 2005). An interview is a research instrument that involves a conversation between an interviewer and interviewee for the specific purpose of obtaining some valuable information. The interaction in a questionnaire is between the respondent and the text, whereas the interview allows for more interaction between three components such as interviewer, interviewee and the context of the conversation. This principle enables the researcher to possess enough understanding about the situation and the factors that might be involved in the process of data collection. Verma and Mallick (1999, p. 123) argue that questionnaires are commonly followed by interviews to obtain qualitative data in the same study. According to them, “the questionnaire provides what is often called the ‘hard data’, and the interviews make it possible to explore in greater detail and in depth some particularly important aspects covered by the questionnaires (supplementary) or related topics that do not lend themselves to the questionnaire approach (complementary)”.

Thus having administered the questionnaires, the researcher has developed three sets of semi-structured interview questions for three different stakeholders for maintaining more freedom and interaction for him and each interviewee as well. The semi-structured interviews have been conducted with English teachers, HR personnel and in-service
engineers. All questions included in the interviews are mainly derived from the research objectives and from the gaps found in students’ and teachers’ questionnaire. Hence some inadequate answers in open-ended items have been explored again during interview sessions.

4.6.7.1 Stakeholders Involved in the Interviews

As for the number of interviewees, the researcher focuses on quality rather than quantity. Moreover, in-depth interviews with open-ended questions encourage the interviewees to elaborate on the topics discussed and thus enrich the data gathered through warm interaction. Based on this principle, the researcher has conducted the in-depth interviews with ten English teachers in these engineering universities of Bangladesh, five in-service engineers to incorporate their comments and reflections of their own experience about the importance of English in their profession and five HR personnel to include the workforce sector and its recruitment criteria.

4.6.7.2 Conducting the Interviews

The interviews have been conducted as follow-up to the administration of the questionnaires during the month of May-July in the academic year 2013-2014 when the academic calendar runs through busy schedule. In addition, most of the ESP teachers have been found busy as guest faculty outside their professional engagement. Similarly the professional engineers and HR personnel in the industry were also found typically busy in their respective profession. Hence the researcher had to struggle to get the interview schedule from all these stakeholders. In addition, the researcher also had to face difficulties due to the restless political environment prevalent during the time as almost every second
day it was a nation-wide political strike. Due to the political turmoil, the researcher had to reschedule his appointment time and again with the stakeholders involved in the interviews. In some cases, he had to conduct the interviews outside their working hours and days. However he managed to conduct interviews with ten ESP teachers, five in-service engineers and five HR personnel. Out of all the ESP teachers interviewed, only one was the Head of the H & SS Department. Since H & SS is a multi-disciplinary Department, most often HODs are appointed from other branches like Sociology, Accounting, Economics, and Management etc.

At the very outset, the researcher greeted each interviewee and expresses his gratitude for giving the consent to participate in the study and explain the purpose of this research and its significance to them. He also sought permission for recording the interview. Few participants showed a kind of reservation towards recording the interview. However others cooperated with the researcher. The interviews were conducted in bilingual environment where both participant and the researcher have used either Bengali or English and that too in a very friendly and informal environment. Each interview took a span of 20-25 minutes duration to complete. The interviews were conventionally conducted in the staff room of the interviewees unless s/he was preoccupied.

Most interviews have been recorded except few and transcribed without wasting much time; in most cases the same day of the interview. Recording interviews has made transcriptions easier and preserved the actual wordiness and train of thought given by the interviewees. Since few interviewees have been found somewhat reserved during recording of the interview, the researcher had to take down notes and that took a bit longer time than
the recorded ones. However interviewees who have been tape-recorded, the researcher took notes every often even for them. As the researcher has already mentioned that the interviews have been conducted using bilingual method, whenever L1 has been used in the interview, it has been translated with great care so that the meaning conveyed is preserved.

4.6.7.3 Description of the Interview with Teachers

The interview with teachers included ten English teachers in the engineering universities of Bangladesh. The interview with the teachers focused on the most important areas that form the fundamentals of classroom pedagogy and specifically built around the research questions. This included brief personal information, ESP teaching practices, and students’ academic and professional needs from teachers’ point of view, existing status of the syllabus, evaluation system etc. The interview also focused on the critical areas of professional development of the teachers so that they can fulfill students’ needs and wants and improve their own performance. The other important issues such as the facilities of ESP teachers’ training and related infrastructural needs have also been discussed. Interviewees have participated with all vigour and shared their views on the topics covered in English class, methods of students’ evaluation, reason behind students’ lack of positive motivation and attitude towards English class, issues related to materials development and possible measure for improvement in those areas and the desired changes into the English classroom for engineering students. The interviewees have also contributed in the study by providing valuable guidelines in terms of the duration of the English course, credit hours, and the nature of the ESP course for engineering students and its possible impact. The interaction between the researcher and the interviewees resulted in a more elaborated
insights of different avenues of engineering students’ academic and professional needs. (Appendix-III).

4.6.7.4 Interviews with the In-service Engineers

The third type of interview was conducted to five professional engineers who have recently started their professional life. The researcher decided to interview these samples with the belief that since these people have recently joined their profession, they might be the right source of information as they can come up with their reflections and experience of the difficulties they face in their profession. For updating the existing English course, information on the workplace needs is very vital and hence it has been included for this study. Two of the interviewees belong to IT sector, two interviewees work in real estate sector and the other participant works in the textile sector. The reason for choosing these various samples from different sectors is to draw inputs from wide range of diverse communication needs in English in various sectors where engineers usually work. In addition to all these, the researcher attempted to obtain some general rather than specific data about the required English language competences at the concerned workplace. Keeping all these issues in mind, the researcher has attempted to interview relevant in-service samples as a primary source of data collection.

These interviews allowed the researcher to ask counter or complementary questions wherever necessary. Discussing the workplace language requirements included types of language competences at workplace, general and specific language requirements etc. All the three interviewees provided adequate and valuable insights for the researcher in terms
of diverse language competences required in different workplace contexts. A copy of the interview with In-service engineers is attached in the Appendix-IV.

4.6.7.5 Interview with HR personnel

Interview with the recruitment officials included five Human Resource (HR) personnel from different organizations. Two out of five HR officials interviewed have represented multi-national companies and the others represented national level corporate companies operating across the country. The interview was semi-structured in nature. It consisted of open-ended questions followed by probes. The primary aim of conducting interview with HR personnel is to elicit valuable information from the employers’ perspective in the ever changing recruiting policy keeping the global demands in mind. These interviews come up with valuable findings about the demands and requirements of the industry. These findings have been very helpful for the English teachers in planning and reviewing the present pedagogic practices and incorporating recent needs in the upcoming English courses for engineering students. The interviewees also revealed how the dynamics of job requirements keep on changing with the change of the world economy. The interviewer inquired about the procedures for recruiting engineers and relevant streams from which they hire to fulfill their requirements for the specific job, whether they offer any intensive courses to improve the communication skills of the newly recruited executives; if so, the nature of the course, resource persons who teaches such ESP course or whether they hire any experts from outside the organization for teaching the course. The last question asks whether the government engineering universities should replace the existing English course keeping the recent requirements in industry and offer any English course for developing the
communication skills and soft skills for these engineering graduates and whether they are willing to welcome any ESP course from the university for their executives. (A sample interview with HR personnel has been attached in the Appendix-V).

4.6.7.6 Process of Analyzing and Interpreting the Interviews

Since the interview questions have been designed keeping the focus addressed in the research questions of the study, the researcher has identified the commonalities, categories and classes of responses and thus has used thick description to give a larger view of the issues addressed in the interviews. Hence these findings from interviews have been used in the triangulation and answering the research question addressed in this study.

4.6.8 Classroom Observation Checklist (COC)

Classroom observation checklist is another frequently used instrument for collecting data in empirical research. It is easy and economical to administer and has the potential to capture different perspectives on an issue. Though there are other means of observing classroom e.g. audio and video recording, the researcher used only passive participant method to observe the classroom for some practical reasons such as the large size of the classes and the funding constraints. Hence the researcher developed a classroom observation checklist to use for observing the English class.

Classroom observation as defined by Marshall and Rossman (1989) entails the systematic noting and recording of events, behavior and artifacts (objects) in the social setting chosen for the pedagogic objectives. Keeping these features in mind, the researcher has developed the checklist based on Brown’s (1994) checklist for observing classrooms. Thus, based on the above principles, the researcher has modified Brown’s (1994) checklist as per the needs
of the current study and has finally designed the classroom observation checklist comprising of 44 items in five different sections such as class structure, methods and techniques of teaching learning, various teaching techniques/strategies, existing syllabus transaction and finally the teaching materials used in class. The sole purpose of this observation is to cross check whether the sample teachers provided the right information while conducting the questionnaire and interview. Apart from these, whatever issues have been missed while conducting the earlier tools, the researcher has attempted to address those issues through classroom observation.

4.6.8.1 Administering the Classroom Observation Checklist (COC)

Before the final administration of the classroom observation, the researcher had few meetings with the research advisory committee and professors from the Department of ELE of EFLU who have contributed a lot in giving the final shape to this classroom observation checklist and thus the final validation of the tool has been ensured. Before observing the classroom, the researcher tried to develop a kind of informal relationship with the sample teachers spending time in their staff room so that they do not feel inhibited while the researcher observes the class. Since the researcher has already had two meetings while administering the questionnaire and interviews, he became a part of the staffroom and thus it was easy for him to observe the class. Besides, after two meetings, he became familiar to the sample students as well. While observing the teachers in the staff and classroom, the role of researcher has been that of an observer participant. The whole purpose of conducting the observation is to ensure whatever the responses received by the researcher
match with the earlier responses from other data collection tools and thus established the validity for the findings.

Once the administration of COC was over, the researcher recorded the day’s observation. At the university, he had to make notes so that the teachers do not feel intimidated. Besides, he also jotted down some scratch notes (Sanjek, 1990) i.e. short notes about actions, statements, dialogues recorded hastily in the field or head notes to record all actions (Lindolf and Taylor, 2002) while observing the class so that the researcher can recollect what happened during the whole day.

As mentioned earlier, the researcher used to keep a record of each day’s observation. For this purpose, he carried a small note pad where he wrote in short hand for his own understanding and reference. This helped him in recording the data in a coded form, to maintain some amount of secrecy as well as to cover all observable issues happening in the classroom. Once both the notes were available with him, he could go back and with the help of his memory he tried to re-trace the happenings of the day.

Classroom observation was a follow-up activity just after the questionnaire and interviews. In this way, he has completed observing two classes each of five English teachers from these five different engineering universities of Bangladesh.

While observing the classroom, the researcher noted down whatever actions took place in class. He also used to introspect about the happenings of the day. The following are the areas of scrutiny under observation:
• What is the overall structure and environment of the classroom?

• How does the teacher start and end up the class?

• What were the various teaching methods and techniques used by the teacher in class?

• What does the teacher do to motivate the students in English class?

• What was the attitude of the students in English class?

• How much of communication and interaction takes place between teacher and students in class?

• What are the other instructional strategies to be used by the teacher in class to achieve the aims and objectives of the lesson?

• How far the syllabus and teaching seemed to be relevant to the engineering needs?

• What is the nature of the teaching materials used in class and how far it is relevant to the students’ needs and interests?

After the observation of the classes each day, the researcher went through the notes again and again and written it down elaborately so that he had a complete picture of what emerged out each day. With this, the researcher would complete the qualitative part of classroom observation as he did not attempt to quantify the findings of the COC.

The researcher has designed the Classroom Observation Checklist (COC) with 44 items in the form of statements followed by Likert scale with 3-point scale indicating 3-strongly
observed, 2-observed to some extent and 1-not observed. The COC contains five sections broadly such as class structure and management, methods of teaching English, teaching techniques and strategies, syllabus/ course content and teaching materials and its application in class apart from the introductory section. Following are the sections of COC (Appendix-VI) as included in the study:

- **Section-A: Class Structure and Management.** This domain comprises of eight items focusing on the English teacher teachers’ skills in managing the class and its existing structure that reflects the genuine environment of the classroom.

- **Section-B; Methods of Teaching English.** This domain comprises of thirteen items in the form of statement. The domain aims at eliciting information on the various methods and approaches that the English teacher used in ESP class of engineering students.

- **Section-C: Teaching Strategies and Techniques.** This domain comprises of nine statements focusing on various teaching strategies and techniques used by English teachers to fulfill the objectives and goals of the course and to address the students’ needs.

- **Section-D: Course Content/ Syllabus.** This domain contains six statements mostly reflecting on the nature of the topics and contents transacted in English class and its relevance to the needs of engineering students.

- **Section-E: Teaching Materials.** This domain comprises of eight items in the form of statement. This domain aims at observing the relevance and usefulness of the teaching materials used in ESP class, and to what extent the materials positively motivate the engineering students.
4.6.8.2 Process of analysis and interpretation of COC

Since, classroom observation is part of the researcher’s qualitative study; the researcher has mostly used qualitative description of the responses drawn from COC for analysis. and hence attempts have been made to discover the common broad patterns. These common patterns were then taken into consideration for interpretation in terms of the research question employed in this study.

4.7 Analysis of Syllabus and Semester-end Question Paper

The research has also analyzed the curriculum documents such as sample English syllabi of all the engineering universities and semester-end examination papers to draw insights about the curriculum transaction practices. The details of analysis of syllabus and examination papers have been presented in the next chapter. Sample copies of the English syllabus and semester-end papers have been attached in the Appendix VII and VIII respectively.

4.8 Conclusion

This chapter has adequately presented information on the mixed method used for this study. As part of research design, this chapter has presented the population, types of samples, various types of data collection tools such as questionnaire for teachers and students, semi-structured interview for English teachers, in-service engineers and HR personnel and classroom observation checklist to be observed by the researcher himself. This chapter further discusses the methods and procedures of development, administration, analysis and interpretation of various tools. Henceforth, the researcher focuses on the data analysis and interpretation in the next chapter.