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Lacunas identified in syllabus design of English language teaching in Engineering Colleges: A study with special reference to Odisha, India

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ABSTRACT

Many universities have introduced Humanities subjects into the engineering streams in tune with trends practiced globally. Engineers need to inculcate the spirit of humanities to acquire team spirit, critical thinking abilities and also problem-solving abilities for career advancement. Language skills empower engineers to face future challenges globally. In India also, Communicative English and Business English/ Professional English have been integrated into the Humanities stream of undergraduate programs in all Engineering colleges. Under this background, this empirical study examines the problems related to syllabus designed in the existing curricula of English language through questionnaire survey which was administered to 770 students of 20 engineering colleges. Ten items questionnaire objectively aimed to analyze three different aspects of the course designed for engineers. Firstly, to find out how the implementation of the syllabus matches the language learning needs of the students of the digital age. Secondly, to examine the teaching methodologies of four language skills of listening, speaking, reading and writing and finally to investigate how far the students preferred lab classes to theory classes. On the basis of the responses elicited, the aspects related to their immediate need of a learner centered curriculum are represented through graphical data for better interpretation. The research, thus, aimed at throwing light on the strengths and weaknesses of the existing system and the need to envisage a paradigm shift for preparing global engineers in the context of fast emerging situations around the world.

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1. Introduction

1.1 Need and Significance of the Study

The study covers the teaching-learning process of English language teaching in Deemed Universities/Govt. run institutions of engineering in Odisha as well as colleges affiliated to Biju Patnaik University of Technology, the only University regulating the functioning of the state-run as well as self-financing technical and professional institutions in the state. As the aim of the course, the learners of English are expected to achieve proper communication skills to apply it in global contexts. While discussing the implications of the global market on English and communication skills for engineering graduates, Riemer (2002) states that globalization directly influences industry's needs; a global engineer must be able to easily cross national and cultural boundaries. Bright and Marc Gregor (1978) have remarked that there is no language learning without exposure. In such a scenario mere knowledge of English, based upon listening, speaking, reading and writing (LSRW) directed towards acquisition of communication skills in engineering colleges, is of little use. The All India Council of Technical Education (AICTE), the agency established by the Government of India to monitor the standards and functioning of technical education including engineering, has suggested certain guidelines related to curriculum to match global standards. It is on the basis of these guidelines that Universities prescribe its syllabus for different disciplines. Thus, this study involves an inquiry into the teaching-learning outcomes of the Communicative/Business English Courses prescribed for the engineering colleges of Odisha.

1.2 Technical Education in Odisha: Brief Background

Odisha, one of the states of the Union of India, came into existence in 1936 on linguistic basis comprising the regions where the vernacular language is Odiya. It is situated in the east coast of India touching the Bay of Bengal in the East and bordering West Bengal at the north-east, Jharkhand (formerly Bihar) at the north-west, Chhattisgarh (formerly Madhya Pradesh) at the south-west and Andhra Pradesh at the south. The land area is 155,707 sq.kms and the population is 36,706,920 (2001 Census). It is a land of temples, fine arts, folk arts, handicrafts, ancient architecture and culture of a high order. In spite of its abundant natural resources like coal, iron, manganese, aluminum, tin, copper, water and forest resources, the state remains economically and educationally backward (literacy-61.5%). The state has a high population of Scheduled Castes and Tribes (38.5%, 2001 Census.) The latest reports show that about 47.5% of the people live below the poverty line. The Human Resource Index as per the latest UNDP reports remains very low compared to other states of India.

Avenues for higher technical education remained quite inadequate till the end of 20th Century. A large number of students depended upon other states for education in Engineering, Medicine and Management etc. Opportunities for higher education in technical and professional areas, in tune with the demands of changing times, continued to remain abysmally low till the end of last century. The establishment of the University College of Engineering (UCE), presently renamed as Veer Surendra Sai University of Technology (VSSUT) at Burla (Sambalpur) in 1956 followed by Regional Engineering College at Rourkela in 1961, (renamed National Institute of Technology)



heralded the dawn of engineering education in the state. The formation of Agricultural University at Bhubaneswar in 1965 had been a milestone in promoting technical education in the state. Another Engineering College in the Govt. sector, Indira Gandhi Institute of Technology (IGIT) was started later in 1982 at Talcher, Angul and Odisha Engineering College (OEC), the first of its kind in the private sector, came up in 1986.

As the number of professional colleges, including Engineering colleges, increased, the need to set up an exclusive body to regulate and monitor the quality of professional education resulted in the formation of the Biju Patnaik University of Technology in 2004, named after the legendary leader, former Chief Minister of the State. Of late, the spree of opening engineering colleges became so endemic that the number of Engineering Colleges in and around the city of Bhubaneswar has risen to 60 and all over the state to 94 in 2009 from 34 in 2004. Presently it has crossed hundred.

Admission to the colleges affiliated to Biju Patnaik University of Technology is made through a common entrance test-Joint Entrance Examination (JEE), Odisha, conducted every year. Those who appear in the All India Engineering Entrance Examination (AIEEE) are also eligible to be admitted in these Colleges. The minimum educational qualification is a pass with Physics, Chemistry & Mathematics in the Higher Secondary Examination (10+2) conducted by any recognized Board/Council. Students not only from Odisha but from other neighboring states like Andhra Pradesh, Jharkhand, Bihar, West Bengal and the North-East are admitted in these Colleges for the graduate programs. Hence the multi-lingual background of the students adds to the

problems of teaching, especially in English language teaching.

1.3 Communicative English/Business English Course

The engineering colleges of Odisha follow the Communicative English course and Business English or Professional English for enhancing the language skills of engineering students at the undergraduate level. It is introduced in the first or second year of the engineering course. In most cases it is a two/three semester course. The course comprises theory and practical classes. It takes various dimensions as English for Academic Purposes (EAP), English for Specific Purposes (ESP) or English for Occupational Purposes (EOP) though the goals do not differ much.

The objectives set in the course are to develop the communication skills of listening, speaking, reading and writing. The students are also advised to cultivate the habit of reading newspapers, magazines and books to consolidate the skills already achieved. The course attempts to familiarize the students with the sounds of English (Phonetics) in a nutshell; provide adequate listening and speaking practice so that the learner can speak with ease, fluency and clarity in common everyday situations and on formal occasions. They are also given practice to use grammar in meaningful contexts and perform functions like ordering; requesting, inviting etc. Every college is supposed to provide a well-equipped Language Laboratory. Students are required to practice listening, speaking and writing skills in the practical or laboratory classes. Certain tasks/assignments are suggested to be taken up in the practical classes. Performance of the students in the laboratory classes is to be assessed and credits recorded and forwarded to the University. It is a two credit course.



Similarly, the Business English course sets its objectives to prepare the students to handle various written communications like reports, letters etc. They are to be trained to make notes or summarize documents, organize meetings, prepare agenda, draft resolutions, write minutes of meetings, make presentations, and write bibliographies. They are also to be familiar with the techniques of managerial communication for information sharing, making presentations, and taking part in meetings, interviews, and negotiations.

Engineering, being a specialized subject to be studied in English, the learners have got to acquire a good command over that language. They might have set their goals on careers of their choice which varies on the basis of their family background, socio-cultural orientations, personal preferences, attitudes and capabilities. Whatever be their level of language skills at the point of entry, it is the duty of the teachers and the administration to devise ways and means to enhance their competency so that they are not handicapped in real life situations in future. In this respect, Long (2005) focuses on the importance of English for Specific Course (ESP) as:

Instead of a one-size-fits-for-all approach, it is more defensible to view every course as involving specific purpose, the difference in each case being simply the precision with which it is possible to identify current or future uses of the L2. It varies from little or no precision in the case of most young children, to great precision in that of most adult learners (p.19).

With all this background, the study aimed at investigating details related to the following problems:

1. Inadequate language competency at entry level

2. Mixed ability of learners due to multi-lingual composition
3. Lack of motivation and complacency
4. Core subject pressures
5. Uninteresting study materials and one-sided lecture methods
6. Lack of orientation of teachers
7. Large classes and lack of individual attention
8. Faulty evaluation system
9. Absence of well-equipped language laboratories
10. Need for qualified and competent faculty to deal with English for Specific Purposes

2. Literature Review

2.1 English in Engineering Studies

There have been various studies on English for Engineering. According to Abu-Rizaizah (2005) satisfying learners' needs and interests has an important influence on their motivation to learn and achieve. According to Al-Fadly (2004, p. 17), the English language courses in most disciplines in the Hadhramout Governorate's Local Council University (HUST), Yemen "are not developed on the basis of an analysis of the English language needs of the undergraduates", and as a result, he argues that the students have not got the benefits they need from such courses. Al-Tamimi & Shuib (2008a), in their evaluation of this curriculum, found that it is more related to GE than to ESP and therefore far removed from the students' needs. This indicates that designing a syllabus suitable for the engineering students is an urgent need. In this account, many researchers (Hutchinson & Waters, 1987; Nunan 1988; Robinson, 1991; Dudley-Evans & John, 1998; Chen, 2006; Jiajing, 2007; Al-Tamimi & Shuib, 2008b) argue that identifying students' needs should be the first step in designing an ESP syllabus.



A study conducted on language needs of undergraduate students from different disciplines, including natural sciences, engineering, medical sciences, economics, administrative sciences, and arts and humanities by Zoghoul & Hussein (1985) in Jordan revealed the need of extensive use of English in both academic and professional settings. The ability to communicate in various forms includes written, oral, audio-visual and graphic presentations along with written business proposals for board room presentations.

Another study was conducted by Atai (2008) on the academic language needs of Computer Science Engineering students of Iran based on English for Specific/Academic Purposes (ESAP) programs. The participants agreed that 'written skills' and 'language components' are important for undergraduate learners of Computer Science engineering. The undergraduates perceived some difficulties with some sub-skills of reading, writing, speaking, listening, using general bilingual dictionaries, and translating subject-specific texts from Persian to English. Moreover, the General English Proficiency (GEP) level of the majority of the engineering students tested proved to be rather low.

In this regard, Mohanty (2011) also states that students today are digitally literate and they live in a world immersed in visual literacy. Television, computer/video games, cell phones, social networking sites, e-mails, chat rooms and instant messaging are common forms of entertainment and communication among students of this generation. Thereby students gain the exposure to learn from the visual media. Visual literacy has become extremely important today in both education and in the wider world of business and industry; the latter because employers are increasingly

demanding it from their prospective workers. Learning with technology fosters creativity in the learner as he or she is empowered to design individual representations of content using technology. Thus, it is clear that English language in the field of engineering studies should focus on the academic and professional lives of engineering students and therefore, there is a need not only to design the syllabus accordingly but also to focus on its practical implications and learning outcomes. (Basturkman, 1998; Pendergrass et al., 2001; Reimer, 2002; Pritchard & Nasr, 2004; Joesba & Ardeo, 2005; Sidek et al., 2006; Hui, 2007; Venkatraman & Prema, 2007, Rayan, 2009).

3. Methodology

For the purpose of collecting the required data, the researcher made use of a questionnaire (Appendix I) as a data collection instrument. According to Nunan (1995), the first-step towards making language learning learner-centeredness is to make the learners aware of the goals, the contents, the learning programs and the pedagogical materials. He states that there is evidence that interest and motivation are enhanced when the purpose and rationale of instruction is made explicit to both learners and teachers.

Questionnaire survey administered to students of different semesters, constituted the primary data of the study. The questionnaire was analyzed by using statistical tools like SPSS software. Since the data collection among 770 students of 20 different engineering colleges was done personally in classroom situations, the avenues for explanation of the items of the questionnaires and observation of the respondents have been plenty. Therefore, a reliable interpretation of the data based on questionnaires is expected.

3.1 Study samples

Stratified random sampling was used to select the sample colleges within the whole population. Out of the hundred odd colleges, 20 colleges were selected. The colleges selected were situated in all the northern, eastern, western and southern parts of the state. There are as many as 55 engineering colleges concentrated in and around the capital city Bhubaneswar alone. The colleges visited included the oldest to the most recent engineering colleges in the state. It included universities, government institutions and private (self-financing) institutions affiliated to the technological university, as per their year of establishment (before 1990, 1990-2000 and 2001-2010), to make it representative and give credibility to the study. The engineering students in colleges affiliated to BPUT follow a common syllabus comprising of the Communicative English course and Business English or Professional English course at the undergraduate level. In most cases, it is either a two or a three-semester course, comprising of both theory and practical classes.

The questionnaires were distributed in theory classes of almost 60 students and lab class of 35 students as per availability of classes. The students who were absent or abstained were minimal and differed from college to college.

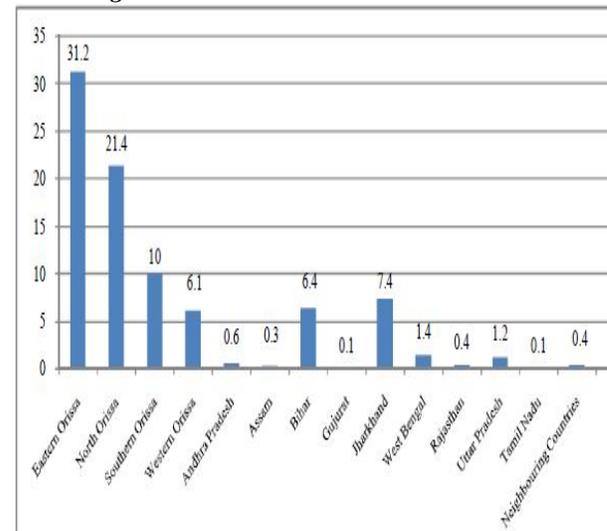
After giving a brief introduction on the objective of conducting the survey, the questionnaires were distributed where the introductory part of the questionnaire collected demographic details, academic details and their previous English learning backgrounds which gave reliability to the study.

3.2 Graphic representation of demographic details

In response to the state and native place maximum respondents belonged to Odisha which has been interpreted into four regions: the numbers of participants from each region are mentioned in brackets: Eastern (240), Northern (165), Southern (77) and Western (47).

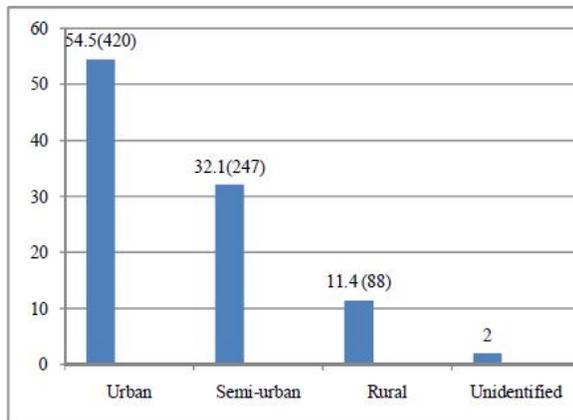
Quite numbers of students also belonged to and had their secondary and higher secondary education from other states like Andhra Pradesh (5), Assam (2), Bihar (49), Gujarat (1), Jharkhand (57), West Bengal (11), Rajasthan (3), Uttar Pradesh (9) and Tamil Nadu (1). There were also a few students from neighboring countries like Bangladesh, Nepal, and Tibet.

Figure: 1 Graph Showing the Various Geographical Locations of Respondents in Percentage



The demographic details also considers the area that the students belonged to; whether urban (420), semi-urban (247) or rural (88).

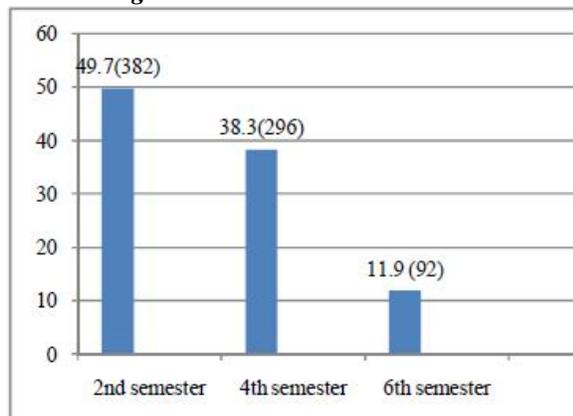
Figure:2 Students' background [Urban, Semi-Urban or Rural Areas in percentage]



The students belonged to the age group of 18-21. The students get admitted into these colleges on the basis of their scores in a common entrance test either at the state level (Joint Entrance Examination (JEE,) or All India Engineering Entrance Examination (AIEEE), at the national level and therefore the students belong to a heterogeneous group belonging to different geographical locations within, and sometimes from outside the country too.

The sample included students from 2nd, 4th and 6th semesters from the above mentioned institutes. Further details of the respondents are presented in graphic representations. Out of a total number of 770, maximum number of respondents were from 2nd semester (382/49.7%) followed by 4th (296/38.3%) and 6th (92 /11.9%) respectively.

Figure:3 Students Belonging to Different Semesters in Percentage



The number of engineering students selected represented 11 branches of engineering as follow: Electrical Engineering (EE, 39 students), Civil Engineering (CE, 52 students), Mechanical Engineering (ME, 148 students), Electronics and Communication Engineering (ECE, 133 students), Automation and Electrical Engineering (AEI, 43 students), Electronics and Technical Communication (ETC, 68 students), Electrical and Electronics Engineering (EEE, 87 students), Instrumentation and Engineering (IE, 24 students), Biotechnology Engineering (BE, 26 students), Computer Science Engineering (CSE, 131 students), and Chemical Engineering (CH, 18 students).

Figure:4 Students Represented from Different Branches of Study

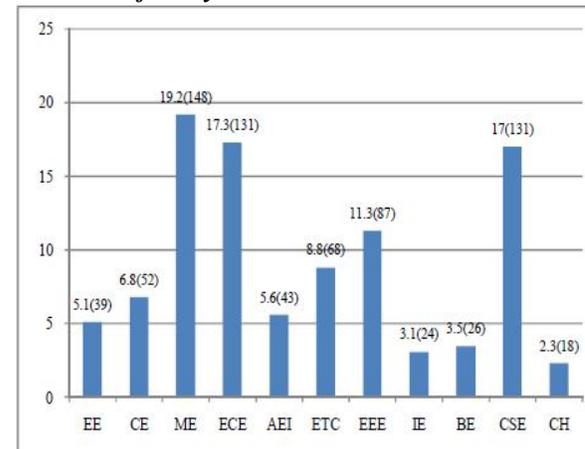
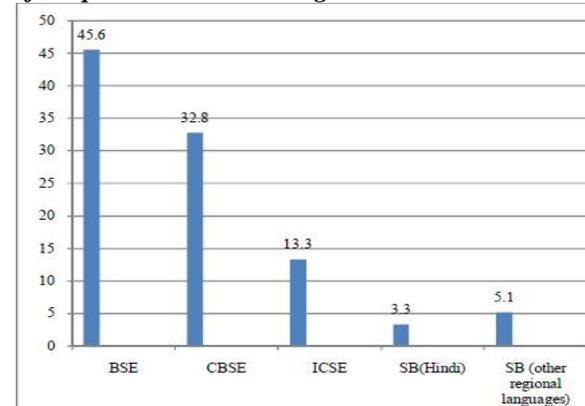


Figure:5 English Language Learning Background of Respondents in Percentage





The matriculation boards from which the respondents passed their **Higher Secondary Examination** were:

1. **352 students passed the** Board of Secondary Education (BSE): the board under the Government, where English is introduced at the primary stage from Class-3 onwards. The medium of instruction is Oriya, which is the official language of the state, and English is taught as a second language:352)

2. **252 students passed the** Central Board of Secondary Education (CBSE): An all-India board where English is the medium of instruction and two other Indian languages, the regional language of the state concerned as well as Hindi, the national language, are taught as second and third languages:252)

3. **103 students passed the** Indian Council of Secondary Education (ICSE): an all-India board where English is the medium of instruction and two other Indian languages, the regional language of the state concerned as well as Hindi, the national language, are taught as second and third languages.:103)

4. **25 students passed the** Secondary Boards (SB) (Hindi medium): These are the Secondary boards of neighboring states where Hindi is the medium of instruction and English is taught as a second language late in the primary stage:25)

5. **39 students passed the** Secondary Boards (Other regional languages): These are the Secondary boards of neighboring states where medium of instruction includes languages like Bengali, Telugu, and Tamil etc. which are the regional languages of the state concerned:39)

The findings relating to the research questions are hereafter discussed in detail.

3.3 Interpretation of results of the questionnaire

Independent variables related to the research questions in syllabus design were

taken into consideration. These variables were selected for data analysis which has been described in detail. The 10 items in the questionnaire were intended to assess students' views on diverse issues related to syllabus-design. Objective information was marked on a likert scale varying from disagree to agree on a scale of 1-5.

Items (1, 2, and 3) enquire lacunas in existing syllabus design where Item- 1 assesses if syllabus has been overcrowded; 2-Are students provided individual attention and 3-If the goals and objectives of the course have been achieved or not.

Among the three items Item 2 (**need for individual attention**) was most required by students. In the first section of the questionnaire, out of the ten items **1, 2 and 3** enquire the lacunas existing in syllabus design from students' point of view:

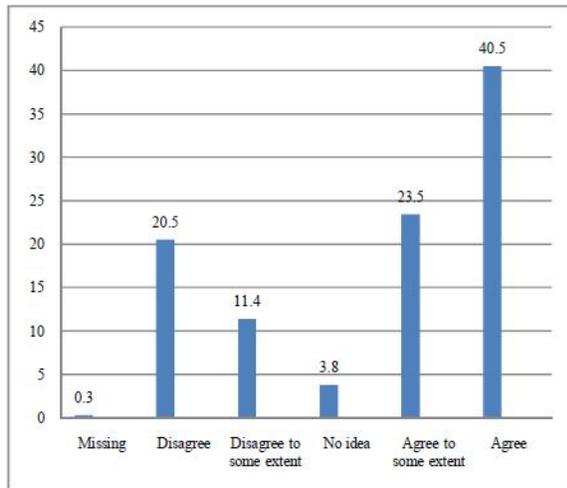
1. Item -1 if syllabus has been overcrowded, more than 50% of the students felt that the syllabus has been overcrowded as it has to be completed within one semester.

2. Item- 2 Above 75 % of students needed individual attention in understanding the unfamiliar concepts included in the syllabus.

3. Item -3-On achievement of goals and objectives of the course, an average of 65% felt that the goals and objectives of the course have not been achieved even after completion of the syllabus before the term-end examinations.

The key gap identified from Section 1 items, 1, 2 and 3 is **Item 2** - need for individual attention

Figure: 6 Graph showing if there is a Need for Individual Attention to Understand the New Concepts in the English Syllabus



Data from respondents revealed that the group which wanted individual attention to understand the unfamiliar concepts included in the syllabus were students who have undergone their schooling in the vernacular medium (mostly Oriya and Hindi). They opined that they hesitated to speak in English fearing mispronunciation due to mother tongue interference and lack of adequate practice in speaking English. In schools, they had little oral English practice. Maximum students opted for the need of individual attention in language classes by marking (4) agree to some extent, or (5) agree.

This shows that individual attention, to cope up with the language tasks, is not being paid in the engineering classroom context. This statement 'need of individual attention' seeks to look into the previous language learning background of respondents. This is in line with the views that Needs analysis, through written questionnaires or formal discussions may be conducted and the syllabus can be modified to make it flexible to suit the needs of the learners (Long, 2005; Jasso, 2005).

One of the important goals of the Communicative English course is to equip the students with proper communication

skills for effective usage in everyday situations and also to manage future workplace situations.

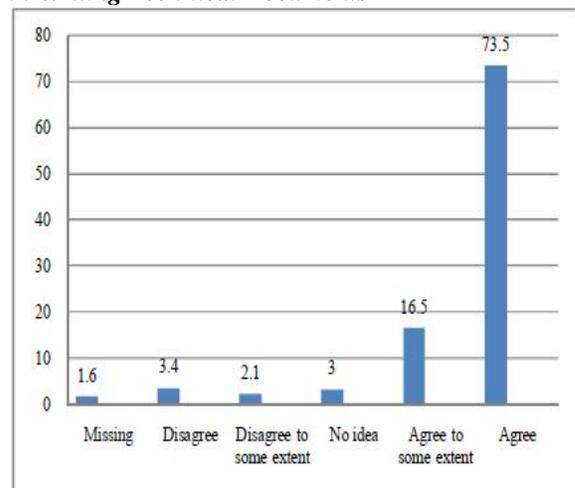
As per the data collected from the students' questionnaire survey, the opportunity for improving LSRW skills in language classes were examined in Items 4,5,6 and 7. Among statements; 4, 5, 6, and 7, 4- need of listening skills, 5-need of speaking skills, 6-need of reading skills and 7-**need for proper practice in writing skills**, maximum students opted for the need for proper practice in writing technical documents, as given in **Item 7**.

1. Out of the four skills, exposure to listening skills were most neglected followed by writing skills though students mentioned that they gained less or no practice in drafting technical documents.

2. The students were somewhat satisfied for improvement found in their speaking abilities though not completely happy in the progress.

3. Students reported that neither guidance nor any activities were conducted to improve reading skills

Figure: 7 Graph Showing Need for Proper Practice in Writing Technical Documents



The graph indicates that the majority of students (73.5%) marked Likert scale 5- Agree, mentioning that they needed practice

in writing technical documents. Writing technical documents is one of the key aspects for future job prospects of engineers. Hence engineering students would benefit much if they are exposed to technical report writing. Among the ten questions this scored as a major need. Most of the students are not exposed to written communications except personal / business letter-writing formats.

Items 8, 9 and 10 focused on the outcome of goals and objectives of the course. Among items, 8 (preference for the need of theory or lab classes), 9 (need of language lab activities throughout the semesters) and 10 (need of a learner centered curriculum), maximum students opted for, Item 9 - need of interactive sessions in language lab throughout the semesters, and Item 10 - need of a learner centered curriculum by marking (4) agree to some extent, or (5) agree.

The details of matriculation boards from which the respondents have undergone Higher Secondary Education helped to differentiate the English language proficiency level of the students.

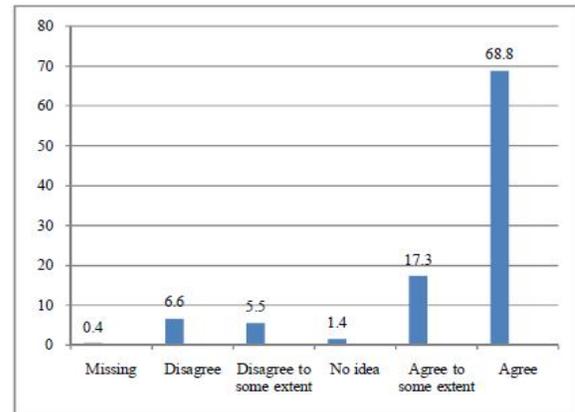
Items 8, 9 and 10 were how far students preferred theory classes, language lab classes and the need of a learner-centered curriculum, respectively.

1. The importance for lab classes were given due importance in comparison to theory classes.

2. The need for continuation of language lab classes throughout engineering education was highly sought after.

3. Most of the students desired a learner centered curriculum.

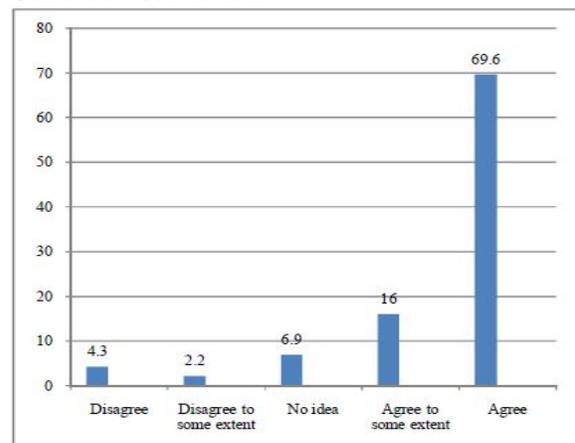
Figure: 8 Graph Showing Need of Language Lab Activities throughout the Semesters



This item probes the preference of the students for practical classes. In response to the statement that if the Language lab sessions should be continued throughout the engineering programs, around 550 students (above 85%) agreed with this proposition. The data show that the students understood the benefit of lab classes and were in favor of getting practical exposure to learn English skills throughout the semesters in the Language laboratory.

Similar response (above 80%) for the necessity of a learner-centered curriculum was found as per the data interpreted in Item 10. Most of the respondents felt that the existing gap in learner-centeredness curriculum should be minimized and match to their learning needs.

Figure: 9 Graph Showing Need for a Learner-Centered Curriculum





It is necessary to set achievable goals for students and encourage the students in self-directed approach to learning. The teacher's role is to make the relevance of a task clear to the students and provide a suitable environment to solve a problem at his/her own pace. Methods of instruction are to cater to the varying groups of learners, not the 'fit for all' mode, Michael Long, (2002), being followed now.

Items 1-10 of the questionnaire thus tried to identify the existing lacunas and necessary modifications essential for skills development needed in the existing syllabus, perceived from the learners' viewpoints.

4. Analysis and Discussion

4.1 Language skill acquisition among the Engineering Graduates

Adequate logistics, well-equipped laboratories, faculty having expertise and experience, off-campus training facilities and a conducive learning environment is what students need to secure high scores and qualify campus recruitments or the stringent entrance tests at national/state levels conducted for their selection. In the emerging scenario of high mobility across state and national boundaries for multifarious purposes proficiency in a link language (English in Indian context) is unavoidable for success. It has been recognized by most recruiters that engineering graduates from reputed engineering colleges of Odisha have technical knowledge at par with those at the national level, if not more. The Engineering students of the state are taught English as a compulsory subject in either/both the first two years of their graduate program; little do they realize its importance in real life situations or in societal contexts. During the vital periods of their English course, motivation level for self-directed learning differs in learners as per their English

learning backgrounds and most of them aim for good grades for a rise in their cumulative grades or only a pass in the subject. This may be due to core subject pressure. Students who are less confident of their English skills believe that their knowledge in English could be updated in the final years, especially for interviews by taking extra coaching in specialized English coaching centers. Those who are confident feel that their language skills gained at the Secondary and the Higher Secondary levels would keep them in good stead to face their occupational needs in future.

The medium of instruction of the schools affiliated to the Board of Secondary Education, (BSE) Odisha is Odiya and English is the medium of Instruction in the schools affiliated to Central Board of secondary Education (CBSE) and Indian Council of Secondary Education (ICSE). In majority of the schools under BSE, English is taught from class III. The teaching is carried out through the Grammar Translation Method which gives stress on grammar & vocabulary as in most other states. Vernacular meanings of English words are taught and the students learn it by rote. Exposure to English Language is only for a few hours in the English class rooms in schools. Since language learning is a social activity that takes place best in a natural environment, the vernacular students all over India do not get adequate exposure to English. In such a situation, the students pass the secondary examination with English as a second language without getting exposed to phonetic English pronunciation, speaking at least a few sentences or reading some texts of literary value. They may have a smattering knowledge of the prescribed texts, but not the language skills necessary to cope with the English medium education at the Higher



Secondary level. The teachers in Upper Primary & Secondary schools themselves are not equipped to teach correct English pronunciation, speaking or reading skills to students. Their exposure to ELT at Orientation Programs do not help them much to handle the basic language skills in the classrooms. Even trained graduate teachers who pass out from the Universities are not exposed to Phonetics or Standard English pronunciation as no university in the state teaches Phonetics or spoken English in the graduate programs. As most of the teachers themselves had got less exposure in mastering language skills, they manage to qualify for degree program with average language proficiency and try to follow similar strategies in teaching their students. Specialized English teachers with Diploma in ELT are quite few in number and hence a vicious circle is created in teaching English, as in most other states. Gokak (1964) points out that “The foundational years for the teaching of English in schools are in the hands of teachers who neither know enough English nor are familiar with the latest and far-reaching developments in the pedagogy of English” (p.65).

A number of English medium schools have sprung up all over India in the last two decades or so, and Odisha is no exception. But a common pattern of teaching and learning English is visible. Languages are learnt by imitation and the best way to learn a language is to expose the learner to native speakers during childhood. But it is doubtful whether the children in English medium schools throughout India are listening to tolerably good English pronunciation, if not that of native speakers. Most English medium schools do not employ kindergarten-trained teachers for the nursery /pre-school classes or for primary sections. They are mostly taught English by raw, un-

trained teachers who are not exposed to Standard English pronunciation. When the teachers themselves lack proper communication skills, the learners cannot expect much in the acquisition of language proficiency.

The general belief is that students passing out of English medium schools (CBSE/ICSE) have good communication skills. Contradictory to this assumption, though students from English medium schools can manage to speak English fluently, they commit many errors especially in written English. Even when most of the students are from different states of India and have passed High/Higher Secondary Examinations from English medium schools, they lack confidence in speaking English in formal situations. Besides, many are weak in grammar and vocabulary and suffer from nervousness in group activities. One of the reasons for this situation is that most of the English medium schools do not insist on their students speaking in English. They have very little exposure to English outside schools or at homes. Most of these students are more comfortable in the vernacular than in English. English medium students may be better than the vernacular medium students in fluency or pronunciation but not sufficient enough to acquire language skills to compete in global standards.

Most of the Higher Secondary Schools (Junior Colleges as they are known in India) are affiliated to the Council of Higher Secondary Education (CHSE). The Council has prescribed English syllabus for 200 marks comprising some portions of communicative English, vocabulary, grammar, essays, poems short stories etc. for reading practice and targets acquisition of the four basic language skills. The communicative English course which claims



to equip Higher Secondary students with the four language skills (listening, speaking reading or writing) does not achieve the targeted goals. Since the evaluation is done only on the writing part, in effect, the course is not much different from that of secondary schools. The other skills are left out of the ambit of term-end examinations and hence are neglected by both teachers and students. Those who learn by rote a few question-answers, have picked up mostly from guides/key books, manage to pass the Examination. Moreover, the teachers who handle the Higher Secondary syllabus of CHSE are not properly trained to teach communicative English as most of them are postgraduates in English literature. Very few of them have ELT background essential to deal with Communicative English syllabus. The minimum qualification prescribed for English teachers by Council Board of Secondary Education (CBSE), Indian Council of Secondary education (ICSE) and the Higher Secondary Boards of most other states is a Post Graduate degree in the subject concerned and Bachelors' degree in Education (B.Ed.), but in many public schools in, Postgraduates without B.Ed. are teaching English in Higher Secondary classes. This also has an impact on the teaching outcomes, particularly in language teaching.

Quantitative expansion of private engineering colleges, in a short span of time, raises doubts about the quality of education being imparted in these institutes. The perspectives of the learners and teachers have been taken into account to find out the advantages and disadvantages of the English syllabus followed in engineering colleges of Orissa.

Since the English language skills of students who enter into the portals of engineering colleges differ considerably, it

has become imperative to assess their capability to manage the syllabus of Communicative/Business English course prescribed for them. In the absence of adequate competency in English language skills, a majority of the learners find it difficult to master the technical terminologies of science and engineering textbooks written in English. Therefore, in order to facilitate engineering learning and to keep pace with the latest trends in the field of science and technology, they require an adequate level of reading and comprehension skills in English. An assessment of their language competence becomes crucial not only to refine their language skills but also to improve their technical knowledge. Once the language competency levels are assessed, it will become easier to devise teaching methodologies appropriate for different groups. 'Just as no medical intervention would be prescribed before a thorough diagnosis of what ails the patient, so no language teaching program should be designed without thorough needs analysis'(Long, 2005,p.1).

It has been seen that among the four basic language skills, **listening activity** has been the most neglected area, due to the misconception fostered by many of us that this skill is imbibed with mental maturity. We take this language skill for granted under the assumption that without any conscious efforts, listening skills can be acquired in a natural way just as a child acquires its mother tongue. But, since we are not listening to English in a natural environment, practicing this skill becomes the only alternative.

The acquisition of **speaking skills** in classroom situation is far from satisfactory in the existing scenario in the engineering colleges of Orissa. In large theory classes



where lecturing method is still practiced, there is little scope to impart practice in speaking. In the practical classes, this can be attempted, but in the absence of well-equipped language laboratories with logistics like movable chairs, individual headphones, relevant software and computer systems, speaking practices remain elusive. Here the teacher-centric instructions, without regular speaking practice, cannot achieve the desired level. Most of the teachers have neither acquired Standard English pronunciation themselves nor are they able to access the latest pronunciation improvement software due to lack of adequate funds and administrative apathy. The teachers themselves need to be provided with adequate resources and training to impart superior language teaching practices demanded of the course for their students (Tickoo, 2004).

Reading practice can be imparted in the practical classes to some extent, but time constraints to cover the prescribed syllabus create barriers quite often. The students can only be guided to acquire this habit and the students themselves have to show interest by reading books and materials of their choice.

Writing skills can be imparted properly in the practical classes provided the teacher is prepared to take extra effort to identify common mistakes and appropriate feedback in the assignments and get it corrected within the limited time that a teacher gets in a particular semester. Through peer feedback, the students could also be encouraged to avoid mistakes. Creating interest in students to write good English becomes essential for implementing it in their future work environments.

In this connection, the remarks of Bright & McGregor (1978) seem pertinent:

Skills can be achieved only through practice, which is something we cannot do for our

pupils. They have got to do it for themselves, which means that the good teacher of language, even more than the teacher of other subjects, should spend a great deal of his time, listening, reading and *not talking*. Of course, he/she will have to talk quite a lot, but his pupils have got to talk and read and write very much more, under his guidance, if they are to make progress (p.4).

In the engineering colleges of Odisha, mostly in self-financing engineering colleges, English is approached casually because of which passing the semester-end examination becomes the sole objective. In spite of its innumerable instructional objectives like the aural-oral skills of listening and speaking, graphic skills of reading and writing, mastery in business communication, etc. the course is yet to achieve the targeted goals as revealed from the study conducted among a cross section of learners and teachers. The demand for candidates with good communication skills by employers, especially during campus placements, and the setting up of private Spoken-English institutes even in rural areas show that there is a need to modify the English teaching-learning process in the engineering curricula.

The study also reveals that the students are more interested in laboratory activities than in theory classes. Therefore, team activities can be promoted in the labs and students enjoy it if properly implemented. It also provides opportunities for developing leadership skills, team spirit and cooperation. Role-plays, performing skits, puzzles, quizzes, slogan writing, creative writing, mock interviews, group discussions on current topics etc. are examples of useful lab activities that can help students acquire leadership and communication skills. Professional engineers use the latest communication techniques for both informal and formal communication and hence



engineering students need to be trained in these practical skills for using it in their career. It is during the formative years of their graduate program that they have to accomplish it. This study thus aims at an assessment of the practicability of the present course that lists targeted ambitious goals.

Based on the inferences of the study, thus, an attempt has been made to suggest improvements in the curricula to fulfill the communication needs of net Generation technical learners and identify appropriate methodology of language instruction to match the learning styles of different learner groups in mixed ability classroom situations. It seeks measures to make learning English an enjoyable experience. It would aim not only at attaining good grades but also bringing out the real potential of individual learners so that they would be able to encounter future language needs successfully.

5. Conclusion

In the Indian context, an engineering student's success in the on-campus recruitment is mainly based on their demonstration of communication skills. According to the National Association of Software and Services Company (NASSCOM) former president Kiran Karnik, only 25 percent of technical graduates are suitable for employment in the outsourcing industry because of their lack of abilities to speak or write well in English. (Karnik, 2007 as cited in P'Rayan 2008:1). In today's world, where the students would be competing for job positions with a global workforce, it would be their English language proficiency that would be tested to the maximum, as English is the most widely spoken language in the world at present. In this respect, Brookes (1964) remarks that "A report or paper must be written. Anyone

engaged in scientific work who is incapable of making this kind of report is not a scientist but a technician, not an engineer, but a mechanic. Proficiency in his written and spoken dialect is a badge which cannot be counterfeit" (pp.115-116). Since individual language learning interests differ widely, a uniform teaching material and methodology may not achieve the desired results. This study suggests a viable, learner-centered methodology to match different learner groups for the acquisition of proper language skills.

Although researchers and educators agree that many Indian engineering graduates are not proficient in English (Tickoo, 2004), few studies have been conducted to examine the procedures, measures and strategies of teaching and learning to improve engineering students' achievements in English. To the researcher's best knowledge all previous studies have focused on students' lack of English skills and the reasons for them. Not many studies have been conducted designed to explore the needs and requirements of these students and thereby offer solutions towards improving their proficiency in English.

It is a fact that some of these problems like English language competency of the learners at entry level in engineering colleges, unwieldy classrooms, shortage of teachers trained in ELT, not paying individual attention to learners etc. cannot be addressed so soon, as it needs policy changes at administrative levels. Most of the self-financing colleges may not be willing to invest huge sums of money in language laboratories or appoint trained, competent teachers to teach Communicative/Business English. Non-availability of such faculty is also a reality. But many other problems can at least be mitigated, if not solved fully, within the existing framework.



A Specific English course-learner-centered, need-based, target-oriented and achievable- will have to be pursued in a methodology to suit the needs of diverse learners. Though it may sound too ideal to be attained amidst too many constraints, there is no alternative but to try it in a highly competitive scenario. This study thus aims at the assessment of the learning outcomes of the present course which has targeted ambitious goals.

Recommendations

On the basis of the findings of the research, the following recommendations are made for the future researchers in this area, ESP teachers, curriculum designers, college administrators and policy makers:

1. The English syllabus should include tasks that reinforce the achievement of generic skills/life skills like leadership skills, teamwork, critical thinking and problem-solving abilities along with effective communication skills. To develop professional competence, the awareness of social and cultural aspects related to the engineers' workplace can be exercised in the classroom by selecting authentic materials. The teachers of English can take the lead in the organizing such interactive sessions and work on it successfully in follow-up sessions. Such exercises are useful to strengthen the communicative competence of students. When they face real life situations in future, they would be able to handle it with ease.

2. If the students are provided facilities and guidance in developing technical English skills with proper orientation and practice they can develop a broad perspective to face future workplace needs. Exposure to corporate culture, interaction with experts from business and industry, management experts, academicians specializing in various fields, scientists and technologists

can empower engineering students to be better communicators in their workplaces. The teachers of English can take the lead in organizing such interactive sessions and work on it successfully and conduct follow-up sessions if necessary.

3. The researcher recommends the ESP teachers to provide ample practice to students in lab classes to give power point presentations, report writing, project report preparation etc. individually and in groups. Software relating to corporate etiquettes, communication, documentation, presentations, interview sessions, or selected movies with related themes etc should be made available in the language laboratories and students should be able to access it in their own time. Group discussions on different facets of corporate culture, current affairs, technical topics, debates, elocutions, extempore talks relating to corporate/business topics, slogan/poster writing competitions, write ups for commercial advertisements, simulated Board Meetings industry visits etc. can be organized by students so that they will be in touch with corporate environment. These activities would be of help in promoting oral communication and workplace communication skills.

4. It is recommended that other researchers conduct additional needs analysis studies to find out the English language needs of students so that the teaching learning system gets strengthened in the process.

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Appendix-1

Students' Questionnaires

Dear students,

This questionnaire is designed to collect information regarding a needs-based approach to English language teaching for engineering purposes. This survey tries to find the lacunas in course design for engineering students in learning English.

1. Name of the college

2 Semester.....3.Branch.....4.Matriculation Board (10th).....5.State.....6.Native Place..... 7.Urban/Semi Urban.....

Items (1-10). Tick any one from the five options (1-2-3-4-5) given below in Items (1-10) (Disagree to agree)

Table-1

Items	Content	Disagree	Disagree to some extent	No idea	Agree to some extent	Agree
1	English syllabus is overloaded to be completed in the time-duration provided.	1	2	3	4	5
2	I need to be assisted individually to understand the new concepts included in the syllabus.	1	2	3	4	5
3	Goals and objectives of the course, as understood by me, are not achieved even after course completion.	1	2	3	4	5
4.	I was given enough practice in listening skills through the audio visual mode.	1	2	3	4	5
5.	I gained confidence in speaking English fluently after attending English classes.	1	2	3	4	5
6.	The institution/teacher provides us with a wide range of books, journals, magazines and fiction in English to be read by us.	1	2	3	4	5
7.	I was given enough practice in writing technical documents.	1	2	3	4	5
8.	Theory classes in English are not necessary for us.	1	2	3	4	5
9.	Language lab sessions should be continued throughout the engineering course.	1	2	3	4	5
10	English classes need to be learner -centered.	1	2	3	4	5