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English and Communication Skills Curricula in Engineering and Technology Courses in the Indian State of Maharashtra: Issues and Recommendations*

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It has been observed that the growth of engineering and technology education in India has been fragmented by regional imbalance, with a greater number of colleges in the south and southwestern regions, including the State of Maharashtra. Indeed, the State of Maharashtra has always been at the forefront of education, technology, agricultural and industrial development at the national level. The majority of students enrolled in engineering and technology courses in the State come from non-English speaking backgrounds and they need to improve their communication skills. A brief outline of the present curricula and teaching/examination schemes for communication skills subjects for engineering diploma and undergraduate courses in the State is presented in the article. The authors discuss the essential features of the subject of communication skills that need to be modified in the basic curricula of engineering diploma and undergraduate courses. The article is concluded with important suggestions regarding the design of proper curricula of communication skills and their advantages in engineering diploma and degree courses, including greater integration across the curricula of communication skills education and examination to reinforce the requisite skills.

INTRODUCTION

India can be characterised as one of the rapidly expanding economies of the world. The country has a stable and democratic political system, and has made significant progress in many human endeavours after independence, including engineering education.

Over the last four decades, India has embarked on a massive expansion in the sector of engineering and technical education, and the nation presently faces many challenges due to rapid growth in unemployment [1]. This is primarily due to exponential growth in the number of engineering institutions in the country, as well as the lack of proper linkages between industry and universities.

The exponential growth of technical education in India in general, and in the State of Maharashtra in particular, has raised many concerns regarding quality. It has been observed that students, after finishing their diploma or undergraduate degree programmes, face several problems at the time of recruitment, such as the lack of knowledge of interview techniques, insufficient written and oral communication skills, expression of knowledge gained, among other aspects.

Despite gaining higher scores during their studies, students often encounter problems during industry selection procedures; a lack of communication skills is one of the reasons for this. Because of this impact, the curriculum of the communication skills subject, which is primarily offered to first-year students in engineering diploma and undergraduate courses, can be considered as being the most important and essential course in this changing environment of globalisation and the internationalisation of technical education.

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ENGINEERING AND TECHNOLOGY EDUCATION IN THE ASIA-PACIFIC REGION

Over the last two decades, the growth of higher education in general, and technical education in particular, in the Asia-Pacific region has been drastic. Several reports on economics and higher education have pointed out the substantial rise of higher education services. India is a pioneer in technical education since regaining its independence; this is especially so for the state of Maharashtra.

Figure 1 gives a brief outline of the structure of technical education in India and the entry requirements for the various levels from the Secondary School Certificate (SSC) and Higher Secondary School Certificate (HSSC).

Engineering and technology education in India, and so in the State of Maharashtra, is generally imparted on three different levels. These are as follows:

- Trade certificate courses and vocational technical courses for skilled workers, which are carried out at Industrial Training Institutes (ITI), higher secondary schools and junior level technical colleges;
- Diplomas in engineering and technology courses to produce middle level technicians, which are undertaken at engineering polytechnics;
- Undergraduate/postgraduate engineering and technology education, which are carried out at the degree and postgraduate levels at engineering institutes, Regional Engineering Colleges (REC), Indian Institutes of Technologies (IIT) and Indian Institutes of Science (IISc) [2].

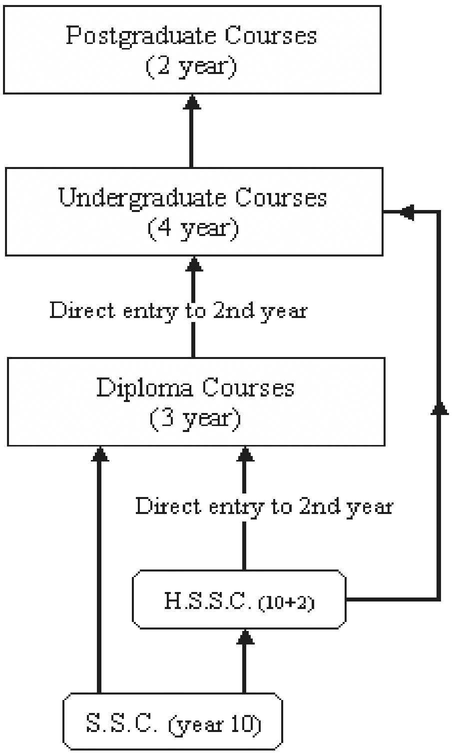

Figure 1: Brief outline of the structure of technical education in India.

THE GROWTH OF TECHNICAL EDUCATION IN INDIA

India has the second largest population in the world, and was the second largest producer of university degrees in 2000. India has also contributed substantially to the global higher education by delivering 687,000 university degrees in 2000, which follows China at 739,000 [3].

A recent literature search indicates that there has been a tremendous expansion of facilities at the higher education sector in India. At the time of regaining Indian independence in 1947, the number of universities and colleges of all types stood at 27 and 370 respectively. In 1996-1997, there were 228 universities and 6,759 affiliated colleges, indicating the stark and tremendous growth in this vital area of Indian education. For instance, there has been a sizeable expansion in student enrolments over the last 50 years in India. The number of students at the university stage, which stood at 0.2 million in 1950-1951, has since risen to over 6 million during the last decade [4].

The literature survey also shows that there has been a substantial growth in the number of engineering and technology institutes during the last four decades. Indeed, the four southern states of India produce about 75% of the country's total engineering workforce, which is more than that produced by the USA [5].

The State of Maharashtra contributes more than 50% of this educational achievement. For instance, in Maharashtra, the intake for diploma and undergraduate engineering courses was 1,940 and 952, respectively, in the year 1960/1961. This has increased to 35,440 and 45,797 in the year 2000/2001 [6]. The population of engineering graduates has increased from 453,920 in 1990 to 1,034,753 in 2000. This represents dramatic growth by a factor of almost 2.28 over 10 years.

Figure 2 illustrates the substantial growth during the last four decades in the progressive intake of diploma and undergraduate engineering courses in the State. Engineering diploma and undergraduate courses provide the biggest academic challenge in terms of the status and quality of the State due to the large outturn of graduates.

It should be noted that the State Government has already granted academic autonomy to many

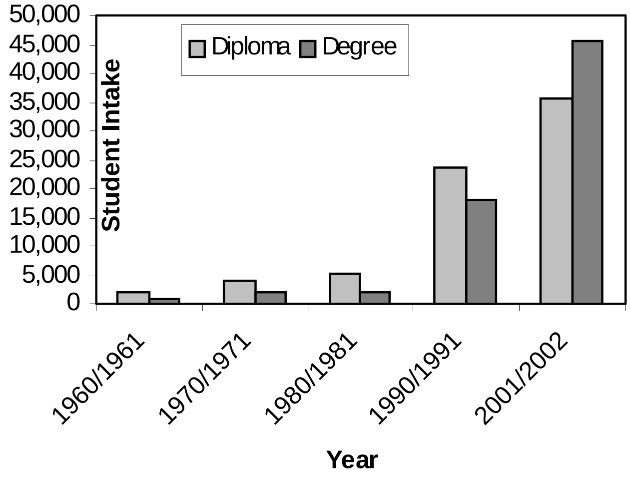

Figure 2: Graph showing the progressive intake for diploma and undergraduate engineering courses in the Indian State of Maharashtra over the past four decades.

government-aided polytechnics, which have designed and introduced their own curricula. However, this has also lessened the level of standardisation in this regard. The remaining institutions have a common syllabus that was formulated, designed and controlled by the Maharashtra State Board of Technical Education (MSBTE), based in Mumbai.

COURSE STRUCTURES

The engineering and technology education course structure in the state of Maharashtra has been somewhat similar in nature as compared to other states. However, the entry requirements for both, diploma and undergraduate engineering courses, is uniform all over the country.

Recently, the state government of Maharashtra decided to introduce the Common Entrance Test (CET) for the engineering undergraduate professional courses from the current academic year, 2004/2005 [6][7]. The course structures of diploma and undergraduate engineering courses are presented in more detail below.

Diploma Courses

The engineering diploma courses in the State are of three years' duration, and taken after 10 years of formal education. The eligibility criteria require that the candidate must have passed his/her Secondary School Certificate (SSC) examination with at least 50% marks in aggregate in the subjects of general science, elementary mathematics or algebra and geometry, as well as English.

Students of the first year engineering diploma course have common curricula with uniform teaching and examination patterns all over the State. However, with academic autonomy being granted to many government-aided polytechnics, standardisation has been reduced with different curricula being designed and introduced. The remaining institutions have a common syllabus that was formulated, designed and controlled by the MSBTE.

Diploma holders tend to be middle level technocrats and are mostly suitable on the production floor or in the maintenance department, mostly at a supervisory level.

Degree Courses

Undergraduate engineering courses in the State are of four years' duration, coming after 12 years (10+2) of higher secondary education. The eligibility criteria require that the candidate must have passed his/her Higher Secondary School Certificate (HSSC) examination with at least 50% marks in aggregate in the following subjects: general science, elementary mathematics or algebra and geometry, and English.

Since undergraduate professional engineering courses in the state are in high demand, admissions are strictly on a merit basis. Candidates are admitted according to the merit list prepared with consideration of their marks obtained in three subjects at year 12, namely: physics, chemistry and mathematics.

Academic autonomy has been granted to many government-aided engineering colleges; as such, standardisation has been diminished due to different curricula being designed and introduced. The remaining institutions have a common syllabus for the first year engineering courses that has been formulated, designed and controlled by the Director of Technical Education (DTE) with the approval of the All India Council for Technical Education (AICTE).

COMMUNICATION SKILLS IN ENGINEERING

Teaching Scheme for Diploma Courses

The first year curriculum of diploma courses includes the subject of *Communication Skills*. The yearly pattern syllabus of communication skills can be divided into three parts, namely:

1. Theory (64 hours), with an examination scheme of 100 marks over three hours;
2. Practical (32 hours);
3. Term work of 25 marks [8].

Each theory lecture can be of one unit, whereas practical work can comprise one to two units (each unit comprising 60 minutes).

At the end of the year, students have to attend a theory examination of three hours duration of 100 maximum marks. They also have to submit their term work satisfactorily to the subject teacher. The work assessed is for a maximum of 25 marks. Students are given various assignments that cover the relevant contents of the curriculum throughout the year.

Teaching Scheme for Degree Courses

The first year engineering undergraduate curriculum for various engineering and architectural courses (BE/BTech) includes the subject of *Professional Communication in English* in the first semester. The AICTE has designed and published the model curriculum for a first year undergraduate programme in engineering subjects [9]. Table 1 gives a brief outline of the course structure for the first semester of a first year undergraduate course in electrical engineering, wherein the subject of communication skills is incorporated in this semester only. The *Professional Communication in English* subject is highlighted.

The subject of communication skills has been allotted two theory periods and one tutorial period per week. The total credits for this subject are three, which cover the following:

- Theory (two hours per week) with an examination scheme of 50 marks at the end of semester;
- Tutorial (one hour per week) with a sessional examination of 25 marks;
- Total assessment of 75 marks for three credit points out of a total of 32 for that semester.

Each theory and tutorial lecture can be of one unit and they last 60 minutes. At the end of every semester, students have to sit a theory examination of 500 marks in six subjects, including English. They also have to be assessed for a practical/drawing/design examination of 100 marks in four subjects, excluding communication skills and mathematics.

At the end of semester, they must submit their sessional work to a satisfactory level to the subject teacher. The sessional work is assessed for a maximum of 300 marks. Students are given various assignments that cover the relevant contents of the curriculum throughout the year.

CURRICULUM CONTENTS FOR DIPLOMA

The contents of the communication subject with regard to theory are as follows:

- Aspects of communication;
- Language grammar;
- Verbal communication;
- Non-verbal communication;
- Professional communication skills.

The contents of the communication subject with

Table 1: Model of a first year curriculum for an undergraduate programme (BE/BTech) in electrical engineering (first semester) [9].

Name of the Subject	Periods			Evaluation Scheme					Credits
	L	T	P	Sessional Examination			ESE	Sub- Total	
Theory									
Language (Professional Communication in English)	2	1	-	15	10	25	50	75	3
Engineering Chemistry	2	1	-	15	10	25	50	75	3
Engineering Physics	3	1	-	30	20	50	100	150	4
Mathematics I	3	1	-	30	20	50	100	150	4
Engineering Mechanics	3	1	-	30	20	50	100	150	4
Basic Electrical Engineering	3	1	-	30	20	50	100	150	4
Practical/Drawing/Design									
Chemistry/Physics Laboratory (to be taken in alternative weeks)	-	-	3	25	-	25	25	50	2
Engineering Mechanics/Electrical Laboratory	-	-	3	25	-	25	25	50	2
Engineering Graphics I	-	-	3	25	-	25	25	50	2
Workshop Practice I	-	-	3	25	-	25	25	50	2
General Proficiency	-	-	-	-		50	-	50	2
Total	16	6	12	-	-	-	-	1,000	32

NB: Abbreviations used: ESE – End Semester Examination; T – Tutorial; L – Lecture; P – Practical.

regard to practicals are divided as detailed below.

Part I covers:

- Studying components of communication and the communication process;
- Examining word formation;
- Identifying sentence elements and discovering clause patterns;
- Expanding nominal compounds;
- Identifying basic and derived structures;
- Studying applied grammar (parts A and B);
- Reading to comprehend the written message.

Part II incorporates:

- Writing general function paragraphs;
- Writing specific function paragraphs (parts A and B);
- Applied writing I: office drafting (four types);
- Applied writing I: business letters (four categories);
- Applied writing I: reports (four types);
- Applied writing I: operating instructions (four specimens);
- Transforming texts into figures, and figures into texts (four specimens) [10].

UNDERGRADUATE CURRICULA

This type of model has been common in most of the universities in India, including the State of Maharashtra; however, there can be slight differences in the actual course contents implemented by universities. For example, Amaravati University has decided to implement the curricula of communication skills subject for the third year in the sixth semester in the course of Information Technology (IT). A theory paper worth 50 marks has to be submitted at the end of the semester. A brief outline of the curriculum is as follows:

- Unit 1: Comprehension over an Unseen Passage: Comprehension A: Word Study; Comprehension B: Structure Study;
- Unit 2: Theoretical Background: Verbal Communication; Non-Verbal Communication;
- Unit 3: Specific Format for Written Communication: Oral Communications.

This course curriculum has been designed to cover very important and essential forms of communications, primarily written and oral, which are required for students in order to help them gain the relevant interview skills after completing their course.

OBSERVATIONS AND FINDINGS

A number of observations and findings have been made; these are listed below.

In the case of diploma students:

- The increasing competition for undergraduate engineering admissions and the strategic failure of vocational and technical courses are the main reasons for the burden of placement and the increasing unemployment rate of diploma holders.
- In the present technical education structure and workforce scenario, the position of diploma holders in the employment market is sandwiched between skilled workers and engineering graduates [11].
- The heterogeneous group of students is taught in the same class of engineering diploma courses as higher secondary certificate holders and have the option to carry over, or seek exemption from, some of the subjects [12].
- Students with English as the main medium of instruction for their high school education are enrolled in the same group as those from a non-English medium of instruction.
- It has been observed that diploma holders face several challenges in the employment market because of low self-confidence; this is due primarily to a lack of communication skills. The main reasons for this are as follows:

    - Poor English language proficiency;
    - Lack of oral and written communication skills;
    - Lack of proper representation techniques.

- Most diploma students (66%) lack confidence when facing interviews during the selection procedure. The reason cited by students and faculty members is the lack of skills and attributes considered essential for personality development [13].

In the case of undergraduate students:

- Due to a lack of proper placement opportunities and industry-institute interaction, the vocational and technical outturn gets diverted back to undergraduate education, rather than the minimum skilled working employment, which, in turn, places a burden on undergraduate unemployment in the State.
- It has been observed that the majority of students enrolled in first year engineering undergraduate courses in the State have a Marathi speaking background, which is part of their secondary education other than English.

- Students are taught in heterogeneous groups in the same class; consequently, there is the same curriculum for the communication skills subject for English speakers as for non-English speaking students.
- Out of a total content of an engineering curriculum of first year undergraduate courses in the State, English and communication skills contributes less than 10%.
- Since communication skills have been introduced only for first year students, and that based only on theoretical assessments, students lack a sufficient level of oral communication skills required after graduation.

SUGGESTIONS

Communication skills are an essential component of an engineer's education, and establishing a subject in this field should be considered a fundamental component of engineering education. However, more can still be done to advance students' acquisition of communication skills within engineering and technology curricula. There are several recommendations that can be drawn from this study; these are elaborated on below.

Skills Integration Across the Diploma

It is recommended that the communication skills curriculum for engineering diploma courses in Maharashtra State be improved by emphasising international aspects. This can be achieved with greater collaborative and networking programmes with renowned educational institutes worldwide (similar to TAFE programmes in Australia and New Zealand).

Communication Skills Integration Across the Degree

Stand-alone subjects need to clearly identify the benefits and relevance of utilising the methods learned so that they can be transferred into the rest of the student's experience. For example, integrating compulsory communication education, whether represented wholly or in part by one or more units, should be part of an engineering degree. However, this is not enough; those skills need to be utilised *across* the degree to demonstrate application and reinforce behaviour.

Engineering exercises need to incorporate oral and written communication skills throughout the curriculum and include presentation and communication as part of the marking process [14][15]. This would advance communication skills acquisition beyond what an isolated subject could achieve. Some level of consistency across the degree will serve to reinforce what has been learnt in previous subjects and build on previous knowledge [16]. This will also impart emphasis on acquiring life-long learning skills.

Augmenting communication skills across the curricula will also contribute to students' higher emotional intelligence (EQ) levels by targeting certain elements. This includes the delivery of oral presentations in engineering studies and incorporating communication and presentation skills in the marking structure of reports so that students treat them more seriously. This may involve a restructuring of certain components of subjects [17].

Written Communication Skills

Written communication skills involve a more active, rather than passive, learning method. Writing can enhance critical thinking and problem-solving skills, as well as serve to identify and confront personal misconceptions [18].

One Polish study found that engineering students displayed greater difficulties in written communication than with oral; this was despite the fact that these students had completed various written tasks previously (eg laboratory reports, projects, etc) [19]. In this case, students needed help in organising and structuring reports and arguments. Ineffective and poor written communication in engineering workplaces was found to lead to misinterpretation, inefficiency and time wastage, thereby adversely affecting problem resolution. Such miscommunication was then found to contribute to mistrust and aggression, as well as appear unprofessional and be unproductive [20]. This indicates that poor communicators will have trouble in the workplace, potentially contributing to problems rather than solving them.

Solutions to this include integrating elements in the curriculum that focus on written communication skills, such as engineering reports, technical writing, essays, reflective journals, peer review, etc. Portfolio work (also in electronic form) can likewise assist in this regard, and can cover scrapbooks, journals, diaries, storyboarding, commentaries, and so on [15].

Also, the type of written communication skills imparted to students needs to be carefully monitored. For example, four of the top five suggestions made by practising engineering graduates in an Irish study covered written communication skills, namely: keyboarding skills, basic MS Office applications, report writing and effective written communication [20]. This gives a clear indication of technological elements that need to be incorporated into fundamental communication training for engineering students in preparation for industry.

Conference Papers

Certain courses offer engineering students the opportunity to present student *conference* papers, including a Call for Papers, presentation and publication of full papers (eg [19][21]). This serves not only to encourage research skills and facilitate the development of presentation skills, but also to advance written communication skills within a required format and consideration of an audience that is comprised of more than just the examiner.

Oral Communication Skills

The burgeoning importance placed on oral communication skills by employers has been echoed internationally for a decade or more and across disciplines. Knowledge and technical know-how are clearly important, but these must be presented with an excellent standard of communication skills, particularly oral. Furthermore, oral communication and presentation skills are considered one of the best *career enhancers* and to be the *single biggest factor in determining a student's career success or failure* [22].

Experiential approaches to oral communication tend to yield better results than purely didactic measures, and can include presentations, peer review, role-play, video, plus the use of current presentation software [14]. Also, extracurricular activities that target communication skills can augment skills in that area and be conducive to life-long learning.

Written assessment of oral communication skills cannot properly identify the level of students' oral communication competency acquisition. Therefore, oral performance(s) by students needs to be integrated in the marking structure of such tests, particularly in the communications subject detailed above. Given this, teachers need to be educated to properly assess oral communication skills, and this may require a short refresher course for teachers.

Interestingly, oral communication skills are primarily taught in the first year in the example given here; this is ideal to facilitate skills acquisition for components *within* the degree. However, oral communication skills, in particular, are required when students attend employer interviews during their third and fourth years (plus later years). This further serves to reinforce the concept that communication skills should be integrated *across* the degree in order to emphasise skills acquisition required later both within and beyond the degree.

Furthermore, specialised coaching in this area can be integrated as part of 5th semester (3rd year) education as part of a follow-up subject in communication (ie Language I in 1st semester, and Language II in 5th semester), and may involve 1-2 hours per week, forming part of the formal curriculum. This can be explored in greater detail in a future paper.

Heterogeneous Learner Group

A heterogeneous group of students is taught in the same class, which is one of the factors influencing students' learning abilities. Additional optional classes may be required for those students from non-English speaking backgrounds, so that they may have the same opportunities to learn as their more proficient fellow students within the first year of the curriculum, particularly in the communications subject.

Personal Mastery

Senge has championed the concept of personal mastery, which concerns personal growth and learning; he has stated that personal mastery entails encouraging people to *continually* [expand] *their ability to create the results in life they truly seek*, in a *quest for continual learning* [23].

Personal mastery links directly with life-long learning; students need such skills to stay abreast of developments in their profession and to build upon existing skills to advance personal knowledge, and with that, the organisation.

Emotional Intelligence and Communication

Emotional intelligence (EQ) impacts on the life and work skills of every individual; engineers are no different in this respect [24][25]. Advancing EQ skills facilitates communication skills, particularly with regard to teamworking skills. Indeed, EQ impacts on other areas, such as foreign language skills acquisition plus intercultural communication skills [26].

The burgeoning field of emotional intelligence (EQ) offers cues that can contribute to the acquisition of communication skills, thereby contributing to the skills base of future global engineers.

Interestingly, it has been identified that *emotional intelligence abilities were about* four times *more important than IQ in determining professional success and prestige*, even for those with a scientific background [27]. Indeed, high IQ seemed to be gained at the expense of EQ skills: *trained incapacity* [27].

Introducing engineering design students to EQ skills at the very start of the course proved beneficial in facilitating student learning at Rensselaer Polytechnic Institute in the USA. Exercises were conducted in *rapport, empathy, persuasion, cooperation, and consensus building*, and contributed to increased student awareness of these skills and improved students' teamworking abilities; one key component involved encouraging communication skills between team members [27].

EQ directly impacts on communication competences by targeting particular elements that improve and enhance the process of communication. In America, the biggest complaint of workers is poor communication with management, sometimes even preventing employees doing their best work. Further, the key to empathy is listening well. Being in control of personal emotions also makes the worker more accessible to other people, both inside and outside the workplace [27].

EQ skills improve teamworking skills, especially with regard to communication between team members. Furthermore, the context of the receiver of the communication, whether it be written, non-verbal or oral, is taken into account through empathy and self awareness. This is important whether the context be cultural, educational, professional, social or otherwise [25].

Experiential approaches, which involve the student in the actual experience of communication, with opportunities for debriefing and re-application, provide opportunities for the development of self-awareness. Constructivist approaches build on past learning and should be utilised to build on students' positive learning experiences to enhance learning and skills development; visualisation can act as a valuable tool in this regard [28]. Exercises in reflection were found to enhance the learning experience and communication skills of engineering students [29].

Engaging learners will help facilitate and stimulate effective and purposeful learning by the students. Involving the learners directly, in particular, will engender a stronger sense of responsibility in the future graduates that they can take beyond their university and into the work arena. This is especially important in engaging learners of English as a Second Language (ESL) and English for Specific Purposes (ESP) as it involves new vocabulary [15]. This will necessarily entail a more active approach by the educator when dealing with the class.

Additional Communication Components to Consider

It should also be recognised that communication skills is not solely comprised of written and oral means. Indeed, the concept of communication needs to be broadened and more widely understood to exceed the popular paradigm of language as the *primary* element so that it incorporates visual aspects in a complementary relation to language. The visual element is integral to communication and can often convey information more succinctly and quickly than verbal or oral means. Furthermore, effective visual communication is cross-cultural and exceeds linguistic boundaries, as well as being multidisciplinary. As such, it is important that engineers of the 21st Century develop visual literacy [30]. However, it seems that this component is not being taught in the first year communication course in Maharashtra State, which focuses only on written and oral skills.

Other skills to be considered include multicultural communication skills, which should be considered as important in this current era of globalisation, where locally trained engineers will work on international projects, with workers from other nations/cultures, or even work beyond Indian borders.

Part of a communications subject should incorporate work skills, including methods for successful employment applications. However, it should also be measured against what industry requires, for example, in résumés and interview skills. *Real world* concepts are no match for real world examples.

Audit of Current Communication Skills

Communications skills training is essential for any engineering programme. As such, it is vital to get the right mix of skills that are required by industry. The current mix evidenced by students' skills does not seem to fit directly with industry requirements; at the very least, competent engineers with excellent grades have difficulty in presenting themselves and their achievements in interview situations. Given this, the communication competences being taught and those in demand should be compared, including feedback from Indian graduates working in industry.

CONCLUSIONS

In this article, the authors have listed the key features of the compulsory communications subject for undergraduate engineering students in the Indian State of Maharashtra.

In order to maintain relevance in today's world, universities need to reflect industry (and social) demands by passing on to graduates the required skills. Isolating into separate subjects those particular skills recognised as necessary, such as oral communication skills, will not facilitate reinforcing the desired behaviour unless they are incorporated into engineering subjects. Integrating these skills within subject modules, especially in the marking structure, can thereby achieve the right skills combination [16]. Nevertheless, the inclusion of communications subject in engineering education should be viewed as a vital component of an engineers' education.

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BIOGRAPHIES

Arun S. Patil graduated in physics in 1987, followed by a Masters in Physics in the specialisation of applied electronics in 1990, from Shivaji University, Kolhapur, in the state of Maharashtra, India.

For the academic year 1987-1988, he was associated with secondary school teaching in science and mathematics. He was also a lecturer in electronics technology for +2 stage vocational course subjects. From 1992 to 2001, Arun Patil was a lecturer in applied physics for first-year engineering Diploma students at Walchand College of Engineering, Sangli, in Maharashtra, India.

He is an active member of the UICEE and has published many articles on education in Indian newspapers and commemorative magazines. He has also had numerous papers published in international conference proceedings and academic journals. He has attended a number of training programmes conducted at the national level in various parts of India.

In mid-February 2001, Arun Patil became a research student and part-time Project Officer at the UICEE, successfully completing a Master of Engineering Science in 2004. He is now engaged in research and development activities as a full-time staff member of the UICEE.

In February 2004, he received the UICEE's prestigious *Silver Badge of Honour* for his significant contribution to global engineering education and to the achievements of the UICEE, in particular. He was presented with this award at the *7th UICEE Annual Conference on Engineering Education*, held in Mumbai, India.

Marc Jorrit Riemer completed a Bachelor of Arts in 1989 at Chisholm Institute of Technology, Melbourne, Australia, and finished his Honours year in English at Monash University, Melbourne, in 1990. Later, he completed a Bachelor of Business (Business Administration) in 1995, also at Monash University.

He has worked for several years in the private sector, including as a Sales Administration Manager for an Australasian wholesale electrical cable/wire/insulation distribution firm, and has been the Administration Officer at the UNESCO International Centre for Engineering Education (UICEE), based in the Faculty of Engineering at Monash University, since December 1999. He is also the Assistant Editor of the UICEE's *Global Journal of Engineering Education*, the *World Transactions on Engineering and Technology Education*, plus several other publications of the UICEE.

With his qualifications, he seeks to build a bridge with other disciplines in the development of engineering education, particularly in the field of communication and English skills, and has presented various papers at international conferences in this field. His research interests include English and communication skills development and emotional intelligence (EQ) issues in relation to the education of engineers.

He is currently engaged researching his Masters, focusing on English and communication skills for engineers within a cultural context.