Developing Engineering Students' Communication Skills by Reducing their Communication Apprehension

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Abstract

Communication Skills Laboratory (GE1352), a course for undergraduate engineering and technology students studying at colleges affiliated to the Anna University, Chennai, India was introduced in November 2006. The main objective of the course is to develop students' communication skills and prepare them for placement / campus recruitment. As it was observed that many students have speech anxiety, at the start of the course, the personal report of communication apprehension (PRCA-24) instrument (McCroskey, 1982) was used among a sample of 120 students at the Jeppiaar Engineering College, Chennai to measure their communication apprehension (CA) and speaking tests were administered to the same students to assess their speaking skills. The analysis of the PRCA scores and the results of the speaking tests revealed that majority of the students have high communication apprehension and around 60 per cent of them lack communication skills. Only if effective measures are taken to help students overcome communication apprehension, it is possible to develop their communication skills in an effective manner. Based on this assumption, certain measures were taken to help students reduce their CA. This paper discusses the results of PRCA-24 and speaking tests, lists the suggestions given by the students themselves to overcome their CA and explains the steps taken to help students overcome their CA and thus develop their communication skills.

Tags: communication apprehension, communication skills, speaking anxiety, speaking skills

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Introduction

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 NASSCOM (National Association of Software and Services Company) president 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). Most students are not 'industry ready' because they lack communication skills. (Infosys, 2008).

Around ten engineering colleges out of about three hundred such colleges in the state of Tamil Nadu in India have a good placement record. Most of the final year undergraduate students of these colleges are recruited by reputed IT and core-engineering companies. In some of these colleges more than 90 per cent of the students are placed and recruiters attribute the success of the students to their ability to communicate well and think clearly. The on-campus recruitment process consists of three or four stages: 1) aptitude test, 2) technical interview, 3) group discussion, and 4) HR interview. During the four stages the candidates' technical knowledge, analytical, verbal reasoning, critical thinking, communication and group skills are assessed and at each stage the unsuccessful candidates are filtered out. Those educational institutions which impart employability skills in their students are successful in getting most of their students placed in top companies. In many engineering colleges communication skills trainers have been employed on full-time basis to train their students.

Aviv (2007) in her article 'Don't be shy' states "Because speaking well is often crucial to getting a job — and to sounding educated — nearly half of American colleges and universities require a public speaking or communications course, according to the National Communication Association."

The urgent need to improve technical students' communication skills has been emphasized by educationists as well as employers. Narayanan, vice chairman of

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Cognizant Technology Solutions and chairman of the NASSCOM, in an interview (Warrier 2007) answered a question regarding the talent demand and supply gap and the role of the NASSCOM to help the industry bridge the gap: "The current situation is that, in terms of availability of talent, the numbers are good. The problem lies in the suitability of people. The industry has moved forward rapidly and technology also has changed but the educational institutions and the curriculum have not changed that rapidly. So, we have to bridge the gap by providing additional training to the people who are coming out of colleges so that they are industry-ready."

Stating the importance of setting up finishing schools, Narayanan suggested the specific areas where training has to be given to those who are admitted to finishing schools. According to him, communication and soft skills and ability to learn on their own and work in teams are very important for those who join the industry. These are the broad guidelines given to the finishing schools. (Warrier, 2007). His statement implies that the teachers of English at professional colleges should undergo paradigm shift and cease to be mere teachers of grammar and structure; they are expected to play the role of communication and soft skills trainers.

The first-year *Engineering English* course has not been effective as students are not trained in listening and speaking skills and their final examinations assess only their reading and writing skills. In this context, it was decided that students should be trained in the skills which recruiters look for in undergraduate engineering students who prepare for on-campus recruitment. Based on the assumption that if students are helped to overcome their communication apprehension first, they will be able to develop their communication skills better and efforts taken by trainers to develop students' employability skills will be more effective. The following section discusses the background to the study.

Background

Jeppiaar Engineering College, Chennai, is one of the leading engineering colleges in Tamil Nadu. The students admitted to various engineering departments are from Chennai

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and other parts of Tamil Nadu. All the students do not have the same level of proficiency in English. Those students who are from Chennai have better communication skills than those who are from rural areas. Most students are highly motivated and have earnest desire to improve their abilities to communicate well. This has been proved by their joining the Business English Certificate (BEC) courses voluntarily and taking the tests. The major concern of the pre-final year students is to develop their communication skills and get placed in reputed companies.

The department of English has been given the responsibility of developing the students' communication skills. The question that we constantly ask is whether we should teach English as a subject and prepare students for examinations or we should teach it as a life skill and prepare them to the workplace.

Communication Skills Laboratory (GE1352), a compulsory course for engineering and technology students studying at colleges affiliated to the Anna University, Tamil Nadu, was introduced in November 2006. It is offered to all third-year students. The main objective of the course is to develop students' communication skills and prepare them for placement / campus recruitment. The researcher has had the opportunity of teaching the *Communication Skills Laboratory* course for eight different groups of students. The components of the course are oral presentation, group discussion, interviews and computer-assisted English language learning. At the end of the course students are tested in group discussion and oral presentation and the students' performance is assessed by external examiners. As the main objective is to develop students' employability skills, the need for teaching the course as life skills arose.

Over the past decade increasing attention has been focused on the importance of communication skills for engineering students in India but not on the problem of communication apprehension (CA) in them and approaches for reducing CA.

Teachers of English have a responsibility to help their students in overcoming their fears about communicating and to assist students in developing more positive perceptions of

communication activities. Miller (1984) says that our classes should produce students who are more confident about reaching out symbolically to others, rather than withdrawing from them.

It is important to diagnose a patient's illness before prescribing medicine to him/her. Teachers often complain that students have communication problems. What do they mean when they say that their students have communication problems? Do they mean that students lack speaking skills or they are reticent or they are shy or they lack certain skills to communicate effectively? Or do they mean that students do not have adequate language proficiency?

Students too share their woes and aspirations. "I'm not comfortable facing the audience." "I'm scared of taking part in group discussions." "I don't feel at home when I meet strangers." "Sir, please don't ask me to propose vote of thanks. I can't do that. I'm very nervous." The fact is that most students have communication apprehension and that acts as a hurdle for them to communicate freely and effectively.

Teachers who are not aware of the implications of the root causes of communication anxiety in their students have just one solution to the problem and that is communication skills training which is common to all. One size doesn't fit all. It is just like prescribing paracetamol (acetaminophen) tablets to any patient who has a headache without actually diagnosing the patient's root causes of the sickness.

For this study, two classes of students of engineering (Information Technology) were taken as samples. Each class had 66 students and the total number of students was 132.

The following section answers how the students' CA was measured, how their speaking skill was assessed and what measures were taken to help students overcome their CA.

Communication Apprehension (CA)

Originally McCroskey (1970) viewed CA as a multi-based anxiety linked to oral communication. Later, he redefined the construct to include more than an oral

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communication component. McCroskey (1982) denotes CA as "an individual's level of fear or anxiety associated with either real or anticipated communication with another person or persons.

A simple definition of CA is anxiety or fear of communicating in different situations. According to Berger, McCroskey & Baldwin (1984), it is "the way a *person feels* about communication, not *how* they communicate". The fear or anxiety could be due to any of the following reasons: lack of proficiency in the target language, lack of practice, insecurity or any pre-programmed thought pattern. Even those who have high level of proficiency in a language can experience CA. Some people may be good at communicating through writing but they may have problems speaking in front of an audience. Some may be good at interpersonal communication, but may not feel comfortable making presentations and vice versa.

Fear of speaking in public has been shown to be very common. According to Wilder (1999), these fears take one of five forms: i) career terror, ii) perfectionism, iii) panic, iv) avoidance and v) trauma. Wilder defines the five fears as follows: career terror is "rooted in the awful feeling that your job, your career, your future is on the line every time you step before a group, enter a meeting, or pick up the telephone". Perfectionism paralyzes the speaker when they demand of themselves that each speech or presentation be perfect. Panic is the combination of unreasonable expectations with fear of failure and real physical symptoms. Avoidance "is a self-sabotage that virtually guarantees anxiety, fear, and diminished performance". Trauma is fear rooted in a long history of being told you're not good enough.

In order to assess the communication apprehension of students of engineering, a sample of 120 students of engineering was asked to complete the personal report of communication apprehension (PRCA-24) (McCroskey, 1982). "The PRCA is the most commonly employed measure of CA in research involving this construct. It has a variety of forms, all of which correlate among themselves about 0.90." (Berger, McCroskey & Baldwin, 1984). This instrument is composed of twenty-four statements concerning feelings about communicating with others. It is used to assess the respondent's

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communication apprehension in the following four areas: i) group discussion, ii) meetings, iii) interpersonal communication and iv) public speaking. The students were required to indicate the degree to which each statement applied to them by marking whether they: strongly disagreed = 1; disagreed = 2; were neutral = 3; agreed = 4; strongly agreed = 5. See Appendix 1.

The overall PRCA scores can vary from 24 to 120. Those who have scored less than 50 have low communication apprehension and those who have scored above 70 have high communication apprehension.

Analysis of PRCA – 24

Figure 1 shows the overall communication apprehension of the 120 students who completed the PRCA-24 questionnaire. The mean value of communication apprehension among them was 68.98. The highest was 97 and the lowest 34. The standard deviation was 14.27.

Figure 1: Analysis of 120 students' overall communication apprehension

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Analysis of 120 Students' Personal Report of Communication Apprehension
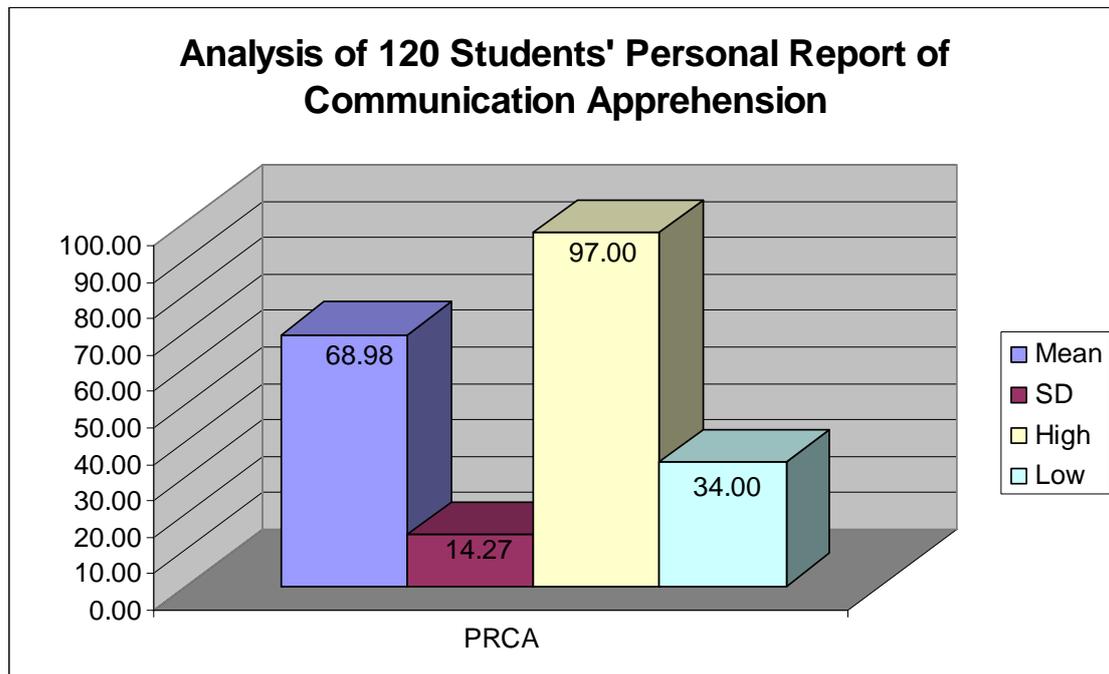
Figure 2 presents the details of PRCA scores of the sample group. Only 12 out of 120 students (10 %) have low CA; forty-four students (36.6%) have medium level of CA and 54 students (45%) have high CA. It is an indication that almost half of the sample group has high CA.

Figure 2: Communication Apprehension Scores of 120 Students

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CA scores of 120 students
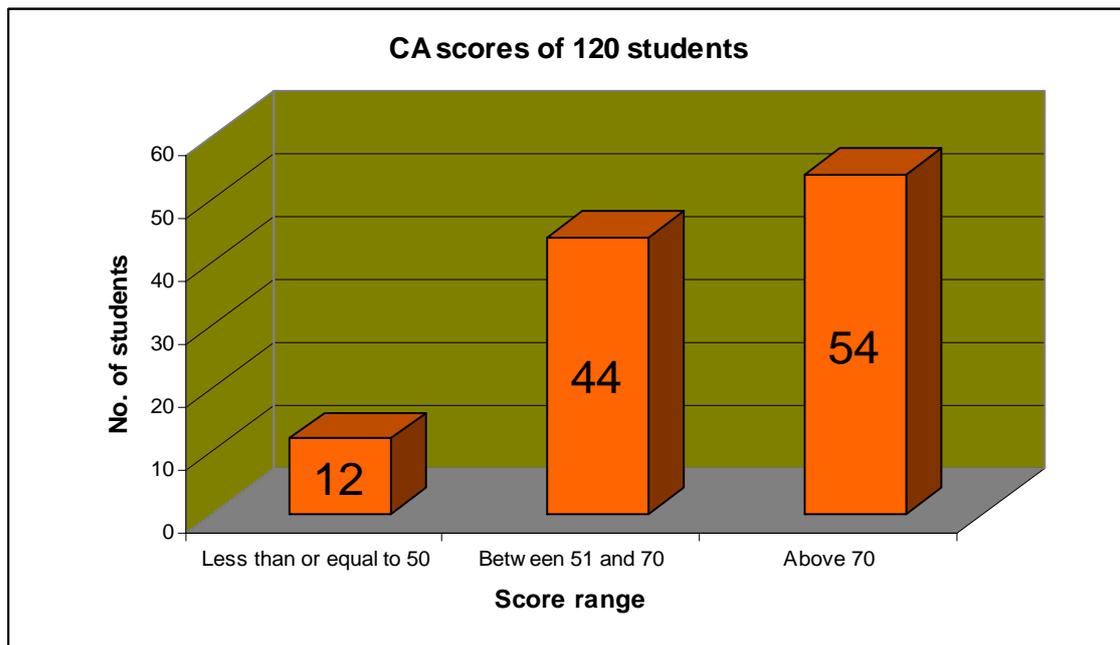
Figure 3 shows the mean value of the students' communication apprehension in four areas: group discussion, meetings, interpersonal communication and public speaking.

This is how the scores in each area are interpreted. Those who have scored less than 12.5 have low level of communication apprehension in the particular area and those who have scored above 17.5 have high level of communication apprehension.

The chart indicates that the mean value of communication apprehension in public speaking is the highest among the four sections. It is an indication that students need more training in public speaking (oral presentation) skills.

A study by Wallechinsky (1977) illustrated that 41% of respondents listed public speaking as their greatest fear while only 19% of respondents' number one fear was dying**.**

Figure 3: Mean values of 120 students' communication apprehension in four speaking sub-skills

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Mean Values of 120 Students' Communication Apprehension

Group Discussion: 15.86
Meetings: 18.05
Interersonal: 16.81
Public Speaking: 18.62
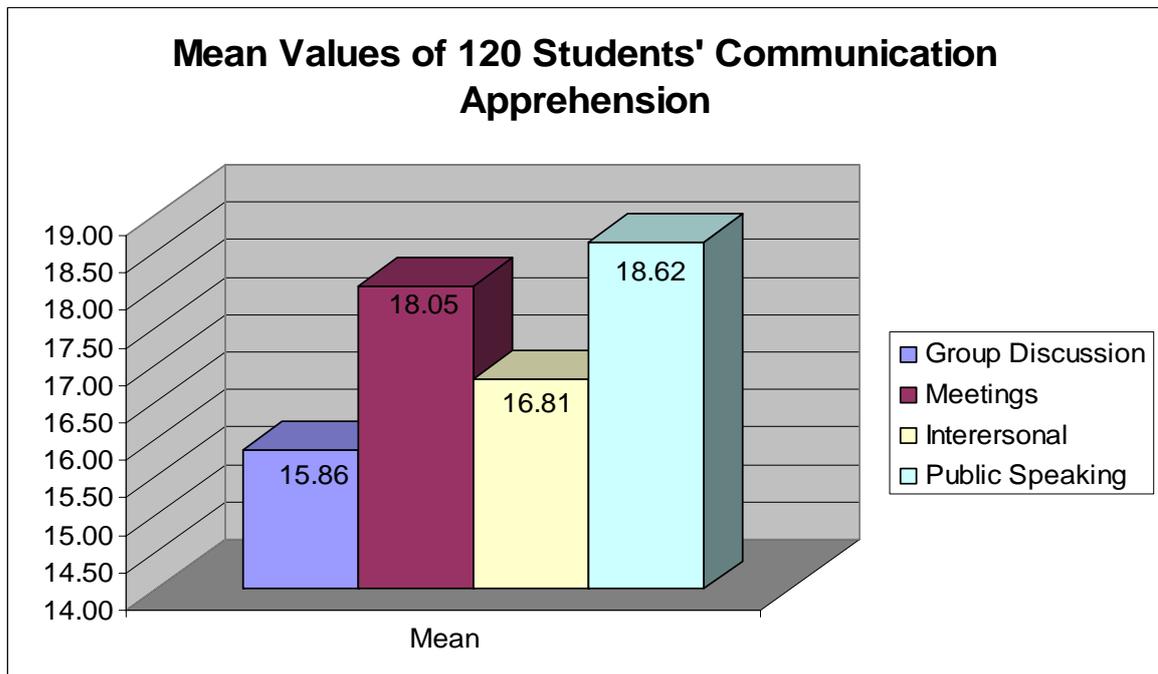
**Analysis of students' communication apprehension in group discussion**

The following items are part of PRCA-24 and this part is related to the area of group discussion. The students were asked to indicate the degree to which each statement applied to them by marking whether they: strongly disagreed = 1; disagreed = 2; were neutral = 3; agreed = 4; strongly agreed = 5.

1. I dislike participating in group discussions.
2. Generally, I am comfortable while participating in group discussions.
3. I am tense and nervous while participating in group discussions.
4. I like to get involved in group discussions.
5. Engaging in group discussion with new people makes me tense and nervous.
6. I am calm and relaxed while participating in group discussions.

The analysis of the results showed that 23.3 percent of students had low CA and 39.2 percent had medium level of apprehension and 37.5 percent had high CA apprehension in the area of group discussion. The pictorial representation is shown in figure 4.

Figure 4: Analysis of CA in Group Discussion
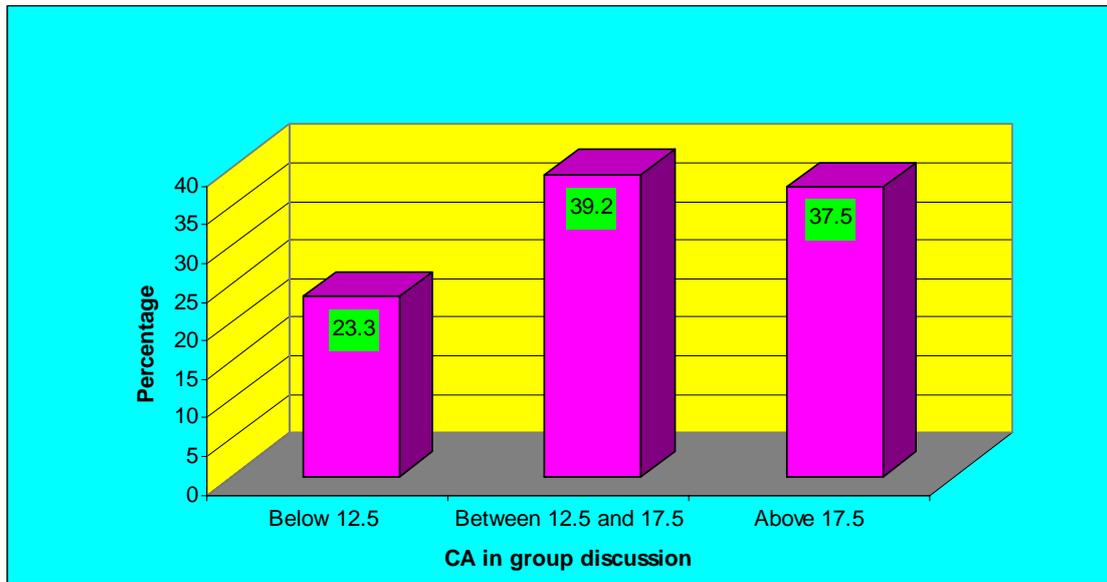
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The chart shows bars for "CA in group discussion" with values 23.3 (Below 12.5), 39.2 (Between 12.5 and 17.5), and 37.5 (Above 17.5), with the y-axis labeled "Percentage".

Analysis of students' communication apprehension in meetings

The following six items are related to the area of meetings.

1. Generally, I am nervous when I have to participate in a meeting.
2. Usually, I am comfortable when I have to participate in a meeting.
3. I am very calm and relaxed when I am called upon to express an opinion at a meeting.
4. I am afraid to express myself at meetings.
5. Communicating at meetings usually makes me uncomfortable.
6. I am very relaxed when answering questions at a meeting.

The analysis of the results showed that only 6.6 percent of students had low CA and 37.5 percent had medium CA and 55.8 percent had high level of apprehension in the area of meetings. Figure 5 is the pictorial representation of the details.

Figure 5: Analysis of CA in meetings
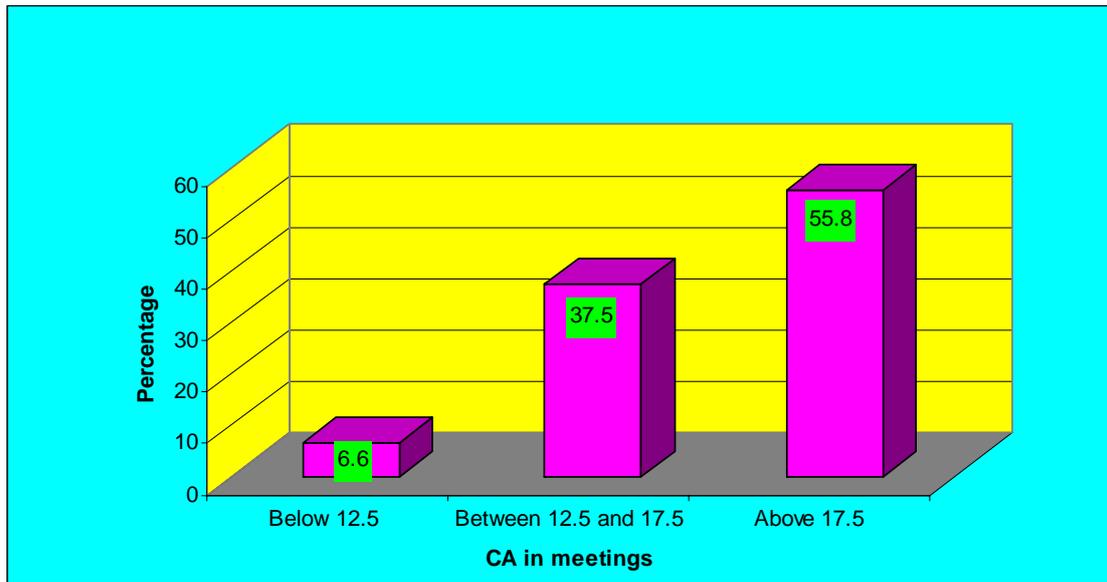
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Analysis of students' communication apprehension in meetings

The following six items are related to the area of interpersonal communication.

1. While participating in a conversation with a new acquaintance, I feel very nervous.
2. I have no fear of speaking up in conversations.
3. Ordinarily I am very tense and nervous in conversations.
4. Ordinarily I am very calm and relaxed in conversations.
5. While conversing with a new acquaintance, I feel very relaxed.
6. I'm afraid to speak up in conversations.

The analysis of the results showed that 17.7 percent of students had low l communication apprehension and 32.5 percent had medium level of CA and 50 percent had high level of apprehension in the area of interpersonal communication. The pictorial representation is shown in figure 5.

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Figure 6: Analysis of CA in interpersonal communication
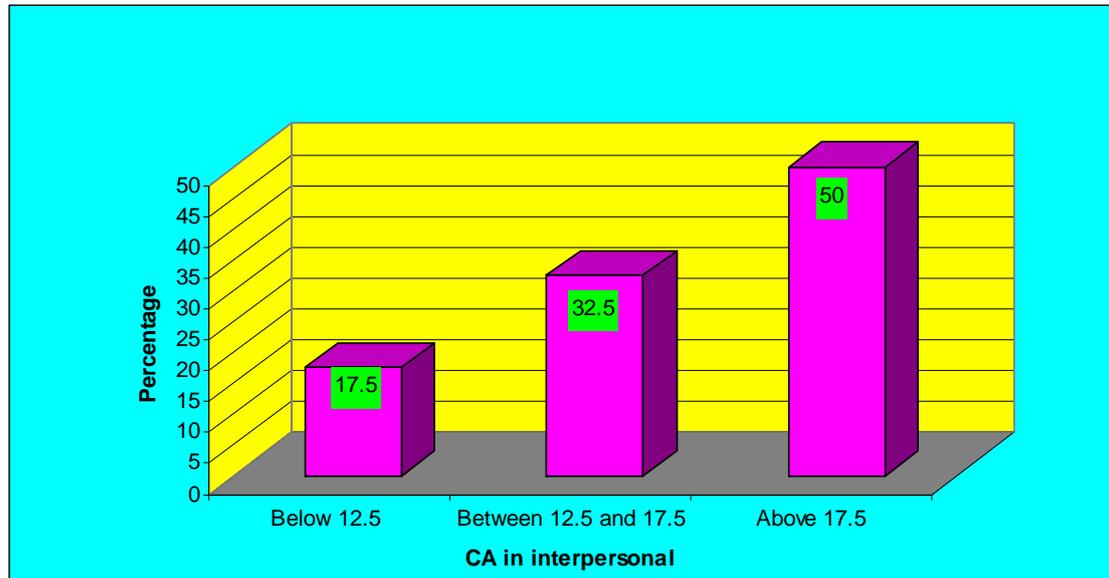
Analysis of students' communication apprehension in public speaking

Given below are the six items related to public speaking (presentation).

1. I have no fear of giving a speech.
2. Certain parts of my body feel very tense and rigid while giving a speech.
3. I feel relaxed while giving a speech.
4. My thoughts become confused and jumbled when I am giving a speech.
5. I face the prospect of giving a speech with confidence.
6. While giving a speech, I get so nervous I forget facts I really know.

The analysis of the results showed that 13 students (10.83 %) had low level of communication apprehension in public speaking. Twenty-eight students (23.3 %) had medium level of CA and 79 students (65.83%) had high level of apprehension in public speaking. Given below is the pictorial representation (Fig.7)

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Figure 7: Analysis of CA in public speaking
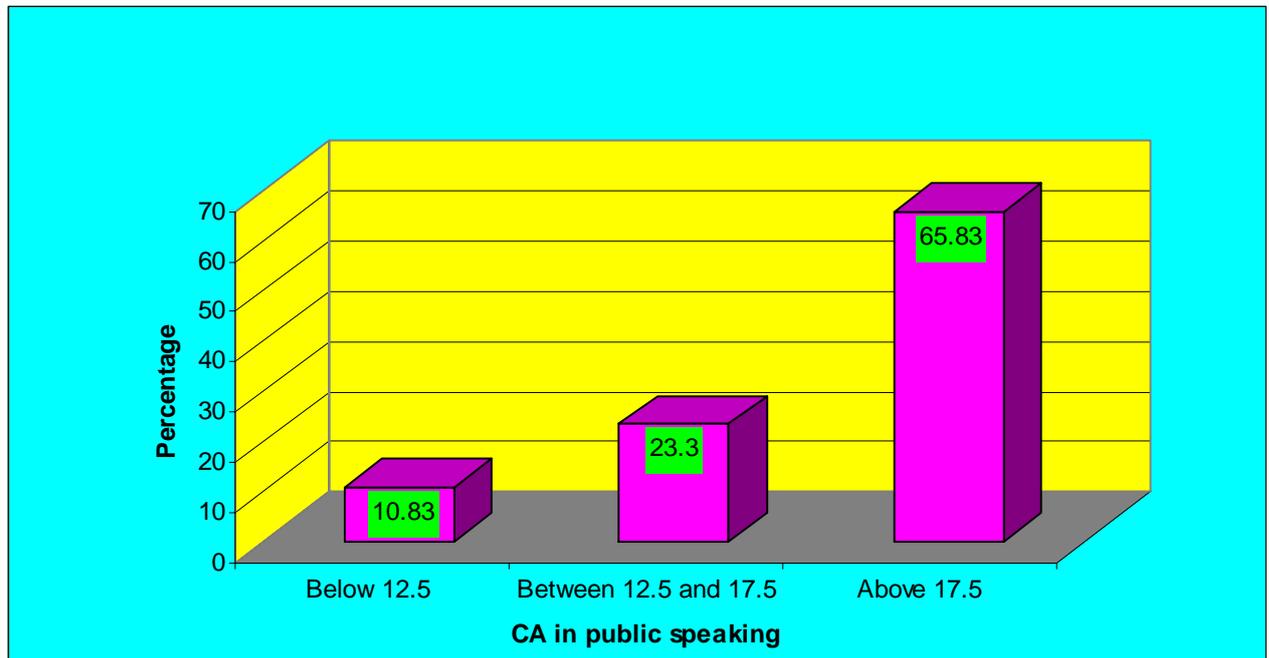
Diagnostic test in speaking

In order to compare the students' PRCA-24 scores in the area of public speaking with their actual performance, the students were given a diagnostic test in speaking at the beginning of the course. They were asked to give a short talk on a general topic for three minutes and were awarded marks based on the following criteria: confidence level, effective communication, appropriate body language, comfort in handling questions and self-assessment. The topics were given to students just a minute before their presentation. The students were also asked at the end of their presentations how they felt before and while giving their oral presentations.

Analysis of the diagnostic test scores

Sixty percent of the students scored less than 50 per cent and they attributed their poor performance to lack of exposure and practice. Forty percent of the students said that it was their first experience to speak in front of an audience.

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The mean value of communication apprehension in public speaking (18.62) was the highest of the mean values of apprehension in other areas: group discussion, meetings and interpersonal communication.

It was found that in most cases both the students' personal report of communication apprehension in public speaking and their performance in the diagnostic speaking test matched.

Overcoming communication apprehension

As Berger, et al. (1984) state that CA is conceptualized as a cognitively experienced phenomenon which may or may not have observable behavioral manifestations in a given case, it was not easy to find out students' CA while they were making presentations, enacting certain roles during role-play exercises and taking part in group discussions. The authors further state that CA is seen as having serious behavioral implications and people with high CA are more likely to avoid or withdraw from communicative contact when that option is available.   According to them, it is important to distinguish communication apprehension from the constructs of reticence and shyness.

> "**Reticence** is concerned with people who are ineffective communicators because they lack adequate communication skills. **Shyness** is seen as the tendency to talk less than the norm, which may result from high CA, reticence, or other causal factors. People with high CA may be reticent and/or shy. However, many people who are reticent and/or shy do not experience high CA." (Berger et al, 1984)

Is it possible to ease the anxiety of highly apprehensive speakers?   Some people argue that communication apprehension problem is one of nature and not nurture. Those who have overcome their speech anxiety assert that it is possible to fight communication apprehension. Communication apprehension is purely psychological and it is possible to reduce one's CA if one really wants to overcome it.

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Role of English language teachers

In the age of globalization, English language teachers are expected to play different roles: diagnosticians, counselors, communication skills consultants and soft skills trainers. As diagnosticians they diagnose the communication problems of learners and as communication skills consultants they devise strategies to develop individual learner's communication skills and as soft skills trainers they train the target group and empower them.

As it is true that a student who has high CA in one area, for example, group discussion, may not have high CA in public speaking or any other area, it is important to identify the areas in which a particular learner has high CA and the training should be focused in that particular area and training should be individualized.

Measures taken to overcome CA

It was felt necessary to help learners overcome their communication apprehension and it was done in three stages: i) Group sharing, ii) One-to-one sessions, and iii) Learner-centred training.

i) Sharing in groups

During the first stage the whole class was divided into eight groups and each group had 7-8 members. The students were asked to share their communication anxiety or problems with regard to making presentations or speaking in front of an audience and how they tried to overcome them. Then a member from each group was asked to summarize the major problems discussed and list the suggestions given to overcome speech anxiety. Each group was given a set of five questions to discuss.

1. Are you comfortable with the results of PRCA-24?
2. Are you ready to accept that you have communication apprehension (CA)?
3. What are your communication problems?
4. Have you ever tried to overcome your CA?

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5. What are your suggestions to help students overcome their communication anxiety?

As most of the students were highly motivated and were interested in overcoming their CA and develop their communication skills, they actively took part in the discussion and shared their personal communication problems with their groups and suggested solutions to overcome CA. P'Rayan (2008:2) lists their suggestions in an article entitled "Fighting Communication Apprehension" as follows:

1. Be aware of your communication apprehension.
2. Accept that you have fear and anxiety when you are asked to speak in front of an audience.
3. Remember that speech anxiety is a natural emotion.
4. List all your fears and find out where they come from.
5. Take steps to enhance your confidence level.
6. Think positively. Develop 'I'm OK and You are OK' attitude.
7. Learn from your friends.
8. Don't compare yourself with others. Remember that you are different from others.
9. Prepare ahead for presentation.
10. Have an outline plan of your presentation.
11. Structure your presentation: introduction, body and conclusion.
12. Get guidance from friends and teachers.
13. Before delivering your speech discuss what you are going to speak with your friends.
14. Use visual aids during your presentation.
15. Take steps to improve your English.
16. Don't memorize your presentation.
17. Practise your presentation in small groups.
18. Visualize your presentation.
19. Know your audience.

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20. Write down two or three questions your audience might ask you.

21. Share your communication problems with your teacher.

22. The teacher should identify the areas in which students have communication problems and training should be individualized.

Sharing one's language or communication problems with persons known to them helps learners in many ways. They can gain confidence, learn useful tips from their peers, develop speaking skills and gets help to overcome their communication anxiety. Most students said that group sharing sessions were therapeutic and useful.

ii) One-to-one meeting with the teacher

Based on the students' suggestions (points 21 and 22), students were encouraged to discuss their communication problems with the teacher. At this stage, each student's individual score in the areas of PRCA-24 was analysed. About 60 percent of the students had a one-to-one meeting with the teacher and shared their personal communication anxiety and sought help to overcome them. These counseling sessions helped the teacher assess the students' abilities to communicate effectively in different situations. During this stage, the teacher played the role of a counselor. The students who had 1-1 meetings with the teacher found the counseling sessions very useful and said the sessions helped them overcome their CA to some extent.

iii) Individualized training

It was decided that based on the students' CA scores in four different areas and their 1-1 sharing with the teacher training in group discussion, meetings, interpersonal communication and public speaking (giving presentations) should be individualized and thus learner-centred. To facilitate the process, the students were grouped as follows:

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a) those who have high CA in GD

b) those who have high CA in meetings

c) those who have high CA in interpersonal

d) those who have high CA in public speaking

Due to time constraints, students were trained only in group discussion and public speaking. The students with high CA were motivated and given opportunities to actively participate in group discussions and speak on informal topics in front of the class. The outcome was very positive and encouraging.

Conclusion

It has been discussed in the paper that it is essential to get students' personal report of their communication apprehension and measures should be taken to help students overcome CA. The three stages involved in helping students fight their CA have been found effective. The details of the research are discussed in another paper. This approach demands a lot from the teacher. The English language teacher is not just a teacher of grammar and sentence structure; he/she is expected to play an active role as a diagnostician, counselor, communication specialist, soft skills trainer.

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Appendix 1

Personal Report of Communication Apprehension

The PRCA-24 is the instrument which is most widely used to measure communication apprehension. This instrument is composed of twenty-four statements concerning feelings about communicating with others. Please indicate the degree to which each statement applies to you by marking whether you:

Strongly Disagree = 1; Disagree = 2; are Neutral = 3; Agree = 4; Strongly Agree = 5

No.	Statement	Score
1	I dislike participating in group discussions.	
2	Generally, I am comfortable while participating in group discussions.	
3	I am tense and nervous while participating in group discussions	
4	I like to get involved in group discussions.	
5	Engaging in a group discussion with new people makes me tense and nervous.	
6	I am calm and relaxed while participating in group discussions.	
7	Generally, I am nervous when I have to participate in a meeting.	
8	Usually, I am comfortable when I have to participate in a meeting.	
9	I am very calm and relaxed when I am called upon to express an opinion at a meeting.	
10	I am afraid to express myself at meetings.	
11	Communicating at meetings usually makes me uncomfortable.	
12	I am very relaxed when answering questions at a meeting.	
13	While participating in a conversation with a new acquaintance, I feel very	

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	nervous.	
14	I have no fear of speaking up in conversations.	
15	Ordinarily I am very tense and nervous in conversations.	
16	Ordinarily I am very calm and relaxed in conversations.	
17	While conversing with a new acquaintance, I feel very relaxed.	
18	I'm afraid to speak up in conversations.	
19	I have no fear of giving a speech.	
20	Certain parts of my body feel very tense and rigid while giving a speech.	
21	I feel relaxed while giving a speech.	
22	My thoughts become confused and jumbled when I am giving a speech.	
23	I face the prospect of giving a speech with confidence.	
24	While giving a speech, I get so nervous I forget facts I really know.	

SCORING:

Group discussion: 18 - (scores for items 2, 4, & 6) + (scores for items 1,3, & 5)

Meetings: 18 - (scores for items 8, 9, & 12) + (scores for items 7, 10, & 11)

Interpersonal: 18 - (scores for items 14, 16, & 17) + (scores for items 13, 15, & 18)

Public Speaking: 18 - (scores for items 19, 21, & 23) + (scores for items 20, 22, &24)

To obtain your total score for the PRCA, simply add your sub-scores together.

Appendix 2

ANALYSIS OF 120 STUDENTS' COMMUNICATION APPREHENSION

S.No.	GD	Meetings	Interersonal	PS	PRCA
1	12	14	16	18	60
2	15	13	18	18	64
3	11	11	14	11	47
4	16	14	18	19	67
5	11	18	13	19	61
6	9	11	11	17	48
7	17	18	14	15	64
8	17	22	23	15	77
9	15	21	19	18	73
10	19	13	21	21	74
11	8	16	19	19	62
12	20	22	15	20	77
13	12	18	22	21	73
14	18	17	16	14	65
15	13	13	15	17	52
16	11	13	11	11	46
17	9	9	11	12	41

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18	9	13	13	12	47
19	12	13	14	10	49
20	11	17	12	21	61
21	15	14	16	14	59
22	11	11	12	11	45
23	20	17	25	18	80
24	15	25	21	18	79
25	9	11	10	9	39
26	15	14	14	16	59
27	13	15	14	16	58
28	22	15	17	13	67
29	16	20	18	18	72
30	16	23	25	23	87
31	13	14	12	12	49
32	13	18	10	18	59
33	19	16	24	25	79
34	18	23	19	23	83
35	13	14	18	18	63
36	9	14	8	15	46
37	18	19	15	16	68
38	13	20	14	25	72
39	17	13	20	14	64
40	19	23	22	15	79
41	23	24	23	24	94
42	20	13	18	18	69
43	23	22	25	23	93
44	21	21	23	21	86
45	8	16	18	20	62
46	6	12	10	6	34
47	10	10	12	14	46
48	20	23	23	24	70
49	22	14	16	19	71
50	21	15	18	18	72
51	14	16	14	17	61
52	17	20	18	18	73
53	20	22	18	25	85
54	22	21	22	22	87
55	19	22	10	18	69
56	13	19	18	18	68
57	22	25	22	28	97
58	19	19	15	19	72
59	10	15	15	20	50
60	19	25	16	25	85
61	10	13	5	12	40
62	18	20	18	17	73
63	19	16	18	22	75
64	13	15	13	18	59
65	20	17	14	14	65

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66	16	20	18	26	80
67	24	22	19	24	89
68	17	23	21	20	81
69	21	23	20	23	87
70	15	18	15	12	60
71	14	24	11	22	71
72	10	16	13	17	56
73	15	20	12	21	68
74	11	19	14	16	60
75	10	14	14	15	53
76	21	26	22	22	91
77	13	13	20	21	67
78	19	27	18	18	82
79	14	15	14	8	51
80	23	20	20	29	92
81	15	25	19	18	77
82	18	31	21	26	96
83	19	17	20	19	75
84	18	21	9	27	75
85	16	18	23	27	84
86	16	27	24	23	90
87	24	20	22	25	91
88	13	19	14	16	62
89	13	17	12	19	61
90	17	20	17	25	79
91	16	18	19	19	72
92	12	16	15	18	61
93	17	18	23	16	74
94	15	18	17	18	68
95	15	18	19	20	72
96	19	20	13	24	76
97	8	19	12	14	53
98	9	13	9	12	43
99	20	23	25	24	92
100	15	18	14	16	63
101	16	14	16	14	60
102	10	16	10	13	49
103	15	17	14	18	64
104	17	13	19	24	73
105	17	18	18	18	71
106	23	21	21	21	86
107	20	20	18	24	82
108	23	20	22	22	87
109	21	21	20	21	83
110	21	19	16	19	75
111	17	21	20	18	76
112	10	18	19	20	67
113	20	18	20	22	80

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114	13	17	13	20	63
115	13	10	8	13	44
116	17	19	15	20	71
117	18	19	15	15	67
118	12	17	20	20	69
119	21	22	27	23	93
120	19	21	18	23	81
Mean	**15.86**	**18.05**	**16.81**	**18.62**	**68.98**
SD	**4.28**	**4.18**	**4.41**	**4.52**	**14.27**
High	**24**	**31**	**27**	**29**	**97**
Low	**6**	**9**	**5**	**6**	**34**

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