

ORAL COMMUNICATION APPREHENSION AND COMMUNICATIVE COMPETENCE AMONG ELECTRICAL ENGINEERING UNDERGRADUATES IN UTeM

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ABSTRACT

This study attempted to determine if communication apprehension existed among electrical engineering students, their perceived communication competence, their general performance in the oral presentation skills and more specifically the possible correlations that existed between these elements. The instruments that were used for data collection in the study are the Self-Perceived Communication Competence Scale (SPCC), Personal Report of Communication Apprehension (PRCA-12) and a Presentation Evaluation Rubric. The findings revealed that the students fall under the modest group of speakers and they do have a moderate amount of communication anxiety but that does not affect their grades. The higher the students' perception of their communicative competence, there is less communication anxiety. The findings also indicate that there's no linear correlation between their levels of apprehension and lecturer evaluation but there does exist a linear relationship between their Self-Perceived Communication Competence and lecturer's evaluation meaning when they had more confidence on their competence, their performance in the presentation is better.

KEYWORDS: *Oral Communication Apprehension, Communicative Competence, Oral Presentation, Electrical Engineering Undergraduates, confidence, performance*

INTRODUCTION

In today's world, globalization is forcing engineers to carefully consider their oral communication skills. International markets demand clear, unambiguous and culturally inclusive oral communication styles. There is overwhelming evidence that good oral competency can make an engineer more versatile and thus more competitive in today's job market. Oral communication is widely acknowledged as critical to the personal, academic, professional and civic lives of graduates (Allen, 2002).

A national survey of 1000 human resource managers identified oral communication skills as valuable for both obtaining employment and successful job performance (Winsor, Curtis & Stephens, 1997). The Boyer Commission (2003) reports that faculty and administrators as well as potential employers are concerned about the graduates lack of good oral communication skills. Those kind of complaints from corporations regarding the lack of communicative competency among engineering undergraduates is not a local issue, but also a global concern. There is also a growing expectation that universities should directly meet the needs of industry and produce engineers who are communicatively competent. It is a practical necessity for these engineers to have the ability to make successful oral presentations (Seliman, 2002).

Research suggests that most people have some form of anxiety or apprehension which interferes with their oral presentation. Recently, this aspect of communication called communication apprehension has received a high degree of scrutiny as it impedes an engineer's professional success. Besides, it has also been proven that this anxiety-based response is not unlike the wide range of phobias that can be found in the areas of psychology and psychiatry.

Being cognizant of the above mentioned facts, the current study draws on the oral communication apprehension and communicative competence of the Special Semester Electrical Engineering undergraduates. A study of this kind is deemed important in order to gain moral understanding of the related issues and to address future needs of the engineering students particularly in relation to their oral communication apprehension and communicative competence.

Oral Communication Apprehension

Communication apprehension is the fear or anxiety associated with real or anticipated communication with another person or persons. Communication apprehension can be produced by merely thinking about or anticipating having to communicate. According to Berger, McCroskey & Baldwin (1984), it is "the way a person feels about communication, not how they communicate". They also stress that 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. The thought of communication alone can generate significant levels of anxiety. Virginia Richmond and James Mc Croskey (1995) report that almost 95% of Americans surveyed said that they have some degree of anxiety about communicating in some situation.

According to Laurilla (2007) communication apprehension has attracted a lot of research especially in the area of student behavior in the classroom and an ever-increasing body of research has accumulated indicating that there is a pervasive relationship between this communication variable and the various aspects of the academic experience. P'Rayan A & Shetty T (2008) denote that 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. P'Rayan A & Shetty T (2008) conducted a study on the overall communication apprehension of 120 engineering students in Anna University, Tamil Nadu, India. The results of their study indicate that almost half of the sample group have high CA. Their study also indicates that the mean value of communication apprehension in public speaking is the highest in comparison to group discussion, meeting and interpersonal communication.

Research by Witt & Behnke (2006) elucidate that one's level of communication apprehension does have a profound impact on their oral communication, social skills and self-esteem. Earlier studies done by Powers & Smythe (1980) affirm that CA levels have a significant effect on students' examination grades. Thus, we can't deny the fact that communication apprehension is a phenomenon that needs to be further investigated and more so in the context of engineering undergraduates who are involved in situations where various cognitive and cultural elements work together.

Communicative Competence

Communicative competence involves understanding what is orally competent as well as the proficiency to create and achieve a competent oral communication outcome. (Morreale et al. 2000). Ahmad Acar (2003) extols that the theory of communicative competence has been taken as an aim within the communicative approach to make a non-native communicatively competent in the target language. In facing the challenges of the future, it is envisaged that engineers need to be communicatively competent so that they would be capable of achieving global recognition and accreditation for excellence in their field.

OBJECTIVES OF THE STUDY

This study specifically intends to answer the following questions.

- a. Does communication apprehension exist among the electrical engineering students?
- b. How do the students view themselves in terms of communication competence?
- c. What is the general performance of the students during the oral presentation?
- d. Do correlations exist between the students Personal Report on Communication (PRCA), Self-Perceived Communication Competence (SPCC) and lecturer's evaluation on presentation performance?

HYPOTHESIS OF THE STUDY

- a. There is a correlation between the student's Personal Report on Communication Apprehension (PRCA) and Self-Perceived Communication Competence (SPCC).
- b. There is a correlation between PRCA and lecturer's evaluation on the presentation performance.
- c. There is a correlation between SPCC and lecturer's evaluation.

METHODOLOGY

This section presents the profile of the respondents in the study, the instruments used, the procedures in data gathering and the statistical treatments used.

Participant Profile

The participants of this study comprise of 32 Special Semester undergraduates of the Electrical Engineering Faculty in UTeM. These students underwent a 12 week Special Semester Course during their semester break which prepared them for the 3rd. Year Technical Communication Course. They were taught on matters like writing resumes, agendas and minutes of a meeting, procedures in conducting meetings, Oral Presentation Skills and others.

Instruments/Materials/Procedures

Three instruments used in this study are the Self-Perceived Communication Competence Scale (SPCC) by Mc Croskey & Mc Croskey (1988) which has been adapted by Laurilla R. (2007) in his study on English for Maritime Purposes. Another instrument used is

The Personal report Of Communication Apprehension (PRCA-12) which is adapted by the researcher from the report by Mc Croskey J.C. (1982). Besides this, the Oral Presentation Rubric which was previously used by Laurilla R.(2007) is also used in this study.

Before the students were exposed to lectures on Oral Presentation Skills, they were given a checklist for the individual report on Self-Perceived Communication Competence by Mc Croskey & Mc Croskey (1988) which was adapted by Laurilla R. in his study in 2007 (Refer Appendix A). This instrument also called SPCC consists of 12 statements representing various contexts of communication related to public, meeting, group, dyad, stranger, acquaintance and friend. The SPCC is developed to find out about people's perception of their own competence in different communication contexts. The scale is intended to let the respondents define their perceived communication competence.

As proposed by Laurilla R. (2007) in his study, the participants in this study completed the questionnaire by indicating their level of competence in each given context, with 0 as the lowest score and 100 as the highest. Each communication context indicates a possible range of level of competence. For example for Public, a score > 86 means High SPCC while a score < 51 indicates Low SPCC. As for Acquaintance, a score > 92 indicates High SPCC whereas < 62 indicates Low SPCC. Laurilla (2007) asserts that the SPCC has generated good alpha reliability estimates (above.85) and has strong face validity.

To compute the sub-scores, the percentage for all the items indicated are added and the total is divided by the number indicated below.

Public	-	1+8+ 12 ; divide by 3
Meeting	-	3+6+10 ; divide by 3
Group	-	4+9+11 ; divide by 3
Dyad	-	2 + 5 + 7 ; divide by 3
Stranger	-	1 + 4 + 7 + 10 ; divide by 4
Acquaintance	-	2+ 6 +9 + 12 ; divide by 4
Friend	-	3 + 5 + 8 + 11 : divide by 4

The total SPCC score is computed by adding the sub-scores for Stranger, Acquaintance and Friend. Then the total sub-score is divided by 3. Higher SPCC scores indicate higher self-perceived communication competence.

The second instrument used in this study is Mc Croskey's (1982) Personal Report of Communication Apprehension (PRCA). (Refer Appendix B). This instrument was adapted by the researcher to suit the criteria of the research. It has 12 statements concerning feelings of people while conducting a presentation. The respondents were asked to rate each statement by using a scale as mentioned in the rubrics. This instrument is given to the students prior to the presentation. According to this instrument, scores can range from 12-60. Scores from 12 - 25 represent students who have very low CA. Scores above 25 - 40 represent students with average CA and scores above 40 - 60 represent people who have very high levels of CA. The scores are retrieved by the following procedure: $36 - (\text{scores for items } 1,3,5,8,9,12 + \text{scores for items } 2,4,6,7,10,11)$

The third instrument used in this study is the Presentation Evaluation Rubric. The lecturer evaluates the respondents' presentation task by summing up the scores on

vocal elements, non-verbal elements, content, organization and audience impact. The scale used to categorize the student's general performance is an adapted version of the assessment criteria used for the Malaysian University English Test (MUET). It is as stated below:

- 0 - 8 - (limited speaker)
- 9 - 16 - (modest speaker)
- 17 - 24 - (competent speaker)
- 25 - 32 - (good speaker)
- 33 - 40 - (very good speaker)

DATA ANALYSIS

What will be reported in this paper are scores for all the 32 students. The numerical aspects of the study include the means, percentages and standard deviations. The statistical analysis includes Pearson R correlation.

FINDINGS AND DISCUSSION

1. Does communication apprehension exist among students?

Table 1 : Communication Apprehension Scores

	N	Minimum	Maximum	Mean	Std. Deviation
student's communication apprehension score	31	22	47	36.13	5.66
Valid N (listwise)	31				

Table 1 displays the mean and the standard deviation of the students' communication apprehension. The mean communication apprehension score among the students is 36.13 (average). Standard deviation is 5.66. Minimum communication apprehension score is 22 (low) whereas the maximum score is 47 (high). Thus, we can conclude that communication apprehension does exist among the students but at a moderate level.

2. How do the students view themselves in terms of communicative competence?

Table 2 : SPCC Scores

	N	Minimum	Maximum	Mean	Std. Deviation
SPCCT	31	42.50	85.83	67.2554	12.0118
Valid N (listwise)	31				

The mean total SPCC score is 67.2554 which is moderate with a standard deviation of 12.0118. The minimum total SPCC is 42.5 and the maximum total SPCC is 85.83, that is moderate too.

Table 3 : Scores for Various Categories

	N	Minimum	Maximum	Mean	Std. Deviation
STRANGER	31	31.25	87.50	59.1694	15.9663
ACQUAINT	31	32.50	82.50	63.9435	12.6637
FRIEND	31	52.50	100.00	78.6532	13.0838
Valid N (listwise)	31				

SPCC scores for Stranger has a mean of 59.1694 which is moderate followed by Acquaintance 63.9435 (moderate) and Friend 78.6532 (moderate).

Table 4 : Scores for Various Categories

	N	Minimum	Maximum	Mean	Std. Deviation
PUBLIC	31	33.33	86.67	65.3656	16.9004
MEETING	31	36.67	83.33	62.4731	13.4133
GROUP	31	40.00	93.33	72.2043	14.0527
DYAD	31	40.00	86.67	69.6237	10.4235
Valid N (listwise)	31				

SPCC scores for the other categories like Public, Meeting, Group and Dyad reflect means that are moderate, that is 65.3656, 62.4731, 72.2043 and 69.6237 respectively.

Based on the mean, we can conclude that these students view themselves as moderate in terms of communicative competence. They are moderately competent in communication involving the respective categories as stated in the tables.

3. What is the general performance of the students during the oral presentation?

Table 4 : Scores for Various Categories

	N	Minimum	Maximum	Mean	Std. Deviation
Lecturer’s evaluation on student’s presentation performance	31	8	29	16.74	6.00
Valid N (listwise)	31				

The mean grades given by lecturer to students is 16.74 with a standard deviation of 6. Based on the scale used to categorize speakers, those with a minimum grade of 8 fall into the limited speaker category and those with a maximum grade of 29 fall into the good speaker category. From the results it is evident that all the students fall under the modest speaker category. In short, these students are modest speakers.

4. Do correlations exist between the students’ Personal Report on Communication Apprehension (PRCA), Self-Perceived Communicative Competence (SPCC) and lecturer’s evaluation on the presentation performance?

To perform the Pearson’s Correlation Test, the researchers had to make sure that the distributions are normal. PRCA, SPCC and lecturer’s evaluation come from a normal distribution.

Based on the normal Q-Q Plot, all three PRCA, SPCC and lecturer's evaluation appear to have a normal distribution.

Table 5 : Tests of Normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
student's communication apprehension score	.098	31	.200*	.986	31	.945
SPCCT	.085	31	.200*	.963	31	.444
Lecturer's evaluation on student's presentation performance	.096	31	.200*	.952	31	.278

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

The tests of normality, Kolmogorov-Smirnov and Shapiro-Wilk are not significant for PRCA, SPCC and the lecturer's evaluation. This advocates that the distribution is normal for all 3 variables. (SPCC, PRCA and Lecturers' evaluation). Next, the Pearson Correlation Test is carried out. The Pearson Correlation Coefficient is a measure of linear association between 2 variables. The significance of the correlation coefficient gives a statistical proof whether the 2 variables are linearly related. Refer to the following tables:

Table 6 : Correlations between PRCA and SPCC

		SPCC	student's communication apprehension score
SPCC	Pearson Correlation	1.000	-.449*
	Sig. (2-tailed)	.	.011
	N	31	31
student's communication apprehension score	Pearson Correlation	-.449*	1.000
	Sig. (2-tailed)	.011	.
	N	31	31

*. Correlation is significant at the 0.05 level (2-tailed).

The Pearson Correlation Coefficient is significant at the 0.05 level. This shows that there is a linear relationship between SPCC and PRCA. The Pearson Correlation Coefficient is -0.449, indicating moderate strength of association and at the same time indicating that PRCA and SPCC are inversely related. Thus, we can conclude that the higher the students' perception of their communication competence, there's a possibility of a lower score for communication apprehension. Therefore, it is apparent that when students have more confidence on competence, they have less communication anxiety.

Table 7 : Correlations between PRCA and lecturer’s evaluation on presentation performance

		Lecturer’s evaluation on student’s presentation performance	student’s communication apprehension score
Lecturer’s evaluation on student’s presentation performance	Pearson Correlation Sig. (2-tailed) N	1.000 . 31	-.334 .067 31
student’s communication apprehension score	Pearson Correlation Sig. (2-tailed) N	-.334 .067 31	1.000 . 31

The Pearson Correlation coefficient is not significant. There is no linear relationship between PRCA and lecturer’s evaluation. The Pearson Correlation Coefficient is -0.334, indicating weak strength of association and at the same time indicating that PRCA and lecturer’s evaluation are inversely related. A scatterplot of PRCA versus lecturer’s evaluation also shows that there is no relationship between PRCA and lecturer’s evaluation. In conclusion, we can say that that there is no linear correlation between level of apprehension and students’ grades.

Table 8 : Correlations between SPCC and Lecturer’s evaluation

		Lecturer’s evaluation on student’s presentation performance	SPCC
Lecturer’s evaluation on student’s presentation performance	Pearson Correlation Sig. (2-tailed) N	1.000 . 31	.469** .008 31
SPCC	Pearson Correlation Sig. (2-tailed) N	.469** .008 31	1.000 . 31

** . Correlation is significant at the 0.01 level (2-tailed).

The Pearson Correlation coefficient is significant at the 0.01 level. This shows that there is a linear relationship between SPCC and lecturer’s evaluation. The Pearson Correlation Coefficient is -0.469, indicating moderate strength of association between SPCC and student’s grades. Hence we can conclude that the higher the students’ perception of their communication competence, there’s a possibility that the grades given by lecturers are higher too. In short, when students have more confidence on competence, there’s better performance in presentation.

CONCLUSION AND RECOMMENDATION

Versatility and competitiveness in today’s job market has prompted scholars and industry leaders to emphasize on the growing importance of oral communication skills and reassess the competency levels of new engineering graduates. In line with this present needs, this study draws into the oral communication and competency levels of the electrical engineering undergraduates and hence point out to 4 general findings.

Firstly, it is found that the undergraduates do have communication apprehension while presenting but it is only at a moderate level. The second finding shows that the students portray a moderate level of communicative competence in all categories, be it with strangers, acquaintance, friends, public, in meetings, groups and dyad. This finding is comparable to those of previous research by Laurilla (2007). As in Laurilla's study, this could be due to the growing positive attitudes towards learning English and their exposure to presentation skills in campus.

Corrello (2000) too states in her study that engineers who graduated 25 years ago or more had CA norms higher than the general population while younger engineers had CA scores lower than the population norms. She relates that this could be because newer engineers are given more access to communication skills training in college.

The third finding based on the students' general performance during their presentations categorizes them generally as modest speakers with an average of 9 to 16 marks. What is evident here is that if ample practice is given, these students have the potential to become competent speakers (average 17-24 marks) in the near future.

It is evident from the fourth finding that the higher the students' perception of their communicative competence, there is a possibility of a lower score for communication apprehension. Relatively, when they are more confident on their competency, there is less communication apprehension. These findings are consistent with the findings of Corello (2000) which state that individuals with high CA definitely rated their own self-competence at performing specific communication skills lower than others. It has also been identified that when the students are more confident on their competency, they perform better in their presentations and the grades given by the lecturers are also higher. This replicates that the students' communicative competency plays a major role in their performance rather than factors like communication apprehension. Besides, this study also shows that students who are more confident of their communication competence have less communication apprehension, thus they managed to perform better in their class presentation. This shows that there is a linkage between these three components. Although the relationships are not strong based on the values of the correlation coefficients there could be other factors that affect students' performance in their presentations such as motivation, preparation, lecturer's role, the awareness of the importance of the English Language and their presentation skills. Therefore, it is recommended that necessary measures are taken to overcome the abovementioned factors as well as improve the undergraduates' communicative competency so that they can reduce communication apprehension to a minimal level to become effective communicators.

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