

# A Case Study: Does An Engineer Have To Talk Like An Engineer?

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## Abstract

This is a qualitative study where the researcher used a quasi ethnographic approach to analyse the English speaking skills of three Civil/Structural engineers in their natural engineering context in Malaysia. Recurring formal and informal communicative events were selected to be studied. For formal interactions, Progress Meetings that were attended by the clients, contractors, and sub-contractors were chosen for detailed descriptions, explanations, and analyses whilst conversational interactions were chosen for informal interactions.

Three types of data-collecting methods were used in this study i.e. observations, ethnographic and semistructured interviews, and questionnaires. These were done in an attempt to gather a more comprehensive data which is representative of the natural behaviour of the members of the speech community. However, this study depended heavily on one type of data-collecting method i.e. the observation method. The other methods were used to supply information that could not be gleaned from mere observations and also to compare one source of information against another for triangulation purpose.

The overall findings suggest that the engineers assume a great deal of mobility and are not expected to be assigned to just a single project or department. Thus, their communication responsibilities are not limited to other engineers that share their background, training and field of specialty. They must also be able to work and communicate with people and groups of different backgrounds and agendas such as architects, managers, draftspersons, etc.

The roles which the engineers assume and the status that are accorded to them and the role-relationships with the other participants heavily influence the communicative patterns in meetings and conversational interactions.

*Keywords: Case Study; Communication; Engineers*

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## 1. Introduction

Ethnography is a field of study that describes and analyses culture while linguistics is a field which describes and analyses language codes. Although the ethnographers and linguists had been aware of the interrelationship of culture and language, their descriptive and analytic products had failed to account for such a relationship. Consequently, Dell Hymes (1962) launched a new discipline, the ethnography of communication. It addresses a new order of information in the structuring of communicative behaviour and its role in the conduct of social life.

The ethnography of communication, according to Trudgill (1989), studies the norms of communicative conduct in different communities and deals with methods for studying these norms.

Saville-Troike (1989) goes on to say that ethnography of communication not only describes and understands communicative behaviour in specific cultural settings but also formulates concepts and theories upon which to build a global metatheory of human communication. In order to understand both the specific and the general, a broad range of data from a large variety of communities is needed.

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### 1.1 Purpose of study

The purpose of the study is to describe, explain and analyse the oral communication of three civil engineers in meetings in their working environment.

### 1.2 Research questions

- a. What are the types of meetings that the engineers attend that necessitate the use of oral communication skills in English for engineers?
- b. What are the main topic areas involving oral communication skills in English which the engineers have to deal with?
- c. Who are the engineers' main interlocutors when communicating in English?
- d. What are the problems faced by the engineers when they communicate in English?

### 1.3 Scope of study

The focus of the study is on meetings that take place in the natural setting. The data was collected from interactions that take place in both the clients' and contractors' working areas such as meeting rooms, site offices, etc.

The study is limited to one channel of communication i.e. face-to-face interactions.

### 1.4 Background of Company

The researcher conducted her study in one company that was established in 1978 and is situated in Petaling Jaya. It is involved in the provision of engineering services, primarily in the oil and gas industry. Over the years, the company has built up a core of highly qualified engineers, designers and support personnel. This has enabled it to provide a comprehensive range of services in areas such as Process Engineering, Mechanical Engineering, Civil Engineering, Structural Engineering, Electrical Engineering, Instrumentation Engineering, Piping Engineering, Onshore and Offshore Pipeline Engineering, Project Management, Construction Management and Procurement Services.

The company is organized into major operating divisions and branches. Each division is divided into engineering and administrative units. Each engineering and administrative department is headed by a manager who is responsible for the activities in his own functional area.

The engineering department is divided into various disciplines. They are the Offshore Structural/Civil, Oil and Gas Process, Mechanical, Electrical, Instrument and Control Systems, Pipelines, Drafting and procurement.

### 1.5 Significance of study

- a. This study attempts to make some inroads in the world of the engineering profession in the form of relevant English for Specific Purposes (ESP) research input. The researcher tries to understand the patterns of communication, the main topics discussed, the purposes of the interactions and the settings in which decisions are made by the expert members of the discourse community that her ESP learners will belong to later in their working lives.
- b. This study provides syllabus or curriculum designers some realistic awareness of the speaking skill needs required of civil engineers in their various roles and settings in a multinational organization.

## 2. Data-Collecting Method

### 2.1 Background of subjects

Engineer	Age	Engineering Degree	Working Experience (Engineering Field)	Department
A	38	U.K.	12 years	Civil Structural
B	34	U.S.A.	10 years	Civil Structural
C	34	U.S.A.	8 years	Construction

### 2.2 Data collection

The data for this study was obtained through two stages:

- a. Prefieldwork

The prefieldwork stage is very crucial since the researcher has to define tentatively the speech community to be studied. She then had to negotiate access to the speech community. It is very important to note at this juncture the researcher was going about her task of selecting the speech community to be studied without any preconceived categories and processes.

## b. Fieldwork

The fieldwork was divided into three major activities:

### i. Gaining Acceptance of the Community

According to Fetterman (1989), an introduction by a member of the speech community is the researcher's best ticket into the community. In this study, the researcher had the Operations Manager as the gatekeeper. He was the one who introduced her to key members of the Engineering Department and encouraged them to cooperate with her.

The other very important intermediary was Engineer A. He did a thorough grand tour of the Engineering Department explaining the physical and organizational layout of it. He also introduced the researcher to community members that he thought the researcher would most probably come in contact with later.

### ii. Collecting Data

Although the observation-participation method is more advantageous, it was not possible for the researcher to apply this method. This was because she did not have the necessary academic qualification to take on an appropriate role in the field except as an observer. Hence, the observation method was chosen.

The researcher was 'shadowing' the three engineers in their natural setting for a period of 8 weeks. She observed Engineer A and B on alternate weeks for four weeks and Engineer C for two continuous weeks. She had the chance to observe them when they were having both formal and informal interactions.

### iii. Interview

The aim of conducting the interviews was to explain and put into a larger context what the researcher saw and experienced. Two types of interviews were employed; informal and semi structured interview.

Informal interviews were conducted throughout the observation period. This approach was applied to solicit information that could not be gleaned from mere observation. For instance, the researcher wanted to discover what the

participants were actually thinking of and how one person's perceptions compared with another's.

Semi structured interviews were conducted at the end of the observation period. The timing was very crucial because by then the researcher would have gained better insight into what questions she would ask and what not to ask so as not to offend the interviewees.

### iv. Questionnaire

The primary aim of the questionnaire was to reinforce the observation. The questionnaires were distributed to the subjects, their project team members, their immediate boss and clients that were working closely with them.

## 2.3 Instruments for data recording

The following instruments are aids to the memory by capturing the detail and flavour of the study and then helping to organize and analyze these data (Fetterman; 1989).

### i. Diary

Continuous diaries were written from observations and interviews before or during or after each session. She noted down the "What?" which described the purpose of the activity or discussion, the "When?" which involved the reference to the time and timing of the activity, the "Where?" which involved a designation of the location of the activity, the "How?" which involved a description of whatever logistics were entailed by the activity.

### ii. Tape Recorder

The tape recorder effectively captured verbatim interactions while leaving the researcher free to follow the conversational flow. The tapes could also be analysed over and over again.

## 3. Conclusion

From this study, which looked into how three mid-level engineers communicated not only with professionals in their own discipline but also with those in other disciplines, it could be seen that the engineering content still proved to be more important than linguistic skill. The engineers need to be absolutely accurate in their technical information. However, an engineer with good

communicative skills do have a distinct advantage over those who do not. Hence training engineering students to be good in communicative skills in English is important.

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