REGISTER ANALYSIS OF THE CONVERSATIONS AMONG PETROLEUM ENGINEERS (A Case Study at PT. Dimas Utama)

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ABSTRACT

This present research aims at identifying register used in the conversations among petroleum engineers by examining the linguistic feature which is viewed from the aspect of the field, the tenor and the mode of discourse of the *Systemic Functional Linguistics* (SFL) approach. Findings show that in the *field* of discourse, all terms of register found in the experiential domain analysis function as technical terms, of which the two major forms of nouns and verbs (i.e., single-word and compound/phrasal word forms) are the most frequent categories identified among other kinds of technical terms. The goal orientation appears to have both short and long term while the social activity results in exchanges among participants. In the *tenor* of discourse, the agentive role is said to be equal and the social role is considered as non-hierarchic. The social distance within the interaction is said to be minimal which is excessively characterized by the use of informal form of expressions. In the *mode* of discourse, the language role exists equally of both constitutive and ancillary identified by the use of present simple tense and non-present tenses, that is, future simple, past simple and present perfect. The channel is in phonic form. The medium is in spoken with visual contact as it is largely characterized by the use of endophoric reference as well as pronouns.

Key Words: SFL, register, conversation, discourse

ABSTRAK

Tujuan dari penelitian ini adalah untuk mengidentifikasi penggunaan istilah khusus di dalam percakapan-percakapan insinyur perminyakan dengan melihat karakteristik linguistik melalui aspek "field", "tenor", dan "mode of discourse" dari pendekatan Linguistik Fungsional Sistemik (SFL). Hasil penelitian menunjukkan bahwa di dalam wacana, semua istilah yang dipakai di lapangan berfungsi sebagai bahasa teknis yang didominasi oleh dua bentuk kata benda dan kata kerja (bentuk tunggal maupun jamak). Orientasi tujuan penggunaan istilah khusus mencakup orientasi jangka pendek dan jangka panjang dimana aktivitas sosial bahasa merupakan komunikasi dua arah. Pada aspek "tenor of discourse", hubungan komunikasi dan peranan sosial antar partisipan dianggap setara yang ditunjukkan dengan penggunaan bahasa informal. Pada aspek "mode of discourse", penggunaan istilah khusus memiliki dua fungsi, yaitu fungsi utama dan fungsi tambahan yang ditunjukkan melalui penggunaan tata bahasa dalam bentuk "present simple" dan dalam bentuk "non-present tenses", antara lain future simple, past simple dan present perfect. Kanal bahasa yang digunakan adalah bentuk fonik. Media yang digunakan adalah media lisan (percakapan) dengan interaksi visual yang ditandai dengan penggunaan kata endoforik dan kata ganti.

Kata kunci: *SFL, istilah khusus, percakapan, wacana*

INTRODUCTION

No two groups of people communicate exactly alike. They express their thoughts, ideas or other purposes differently. Language varies "according to its uses as well as its users, where it is used and to whom, and who is using it" (Holmes, 2007, p. 235). People who have different social, education, profession, and cultural background commonly communicate with each other in different ways. They tend to automatically choose a variety of language when they meet a particular group or social background that is appropriate to the situation or context.

In different situations, groups of people in a particular field use different forms of language. They provide a specific variety to convey messages which is generally known as *register* or *jargon*. Register is identified as a variety according to its use. It is "what you are speaking at the time, depending on what you are doing and the nature of the activity in which the language is functioning" (Halliday, 1989, p. 41). Register thus refers to an arrangement of words and phrases that is typically associated with a specific situational arrangement of the field, the tenor and the mode of discourse (Halliday, 1978; Halliday & Hasan, 1989). Similarly, Bell (1976) defines register as a variety of language associated with particular groups of people of the same interests in a particular circumstance. The use of register in this sense tends to be caused by the use to which the individual is putting the language in the specific circumstance, rather than by the relatively permanent characteristics of the user such as age, education, and also social class membership of a language.

Some other linguists prefer to restrict the domain of the term register to describe specific vocabulary (which one might commonly calls *jargon*) which is associated with particular groups in a certain situation. Wardhaugh (1997) emphasizes the term register as a set of vocabulary items associated with occupational groups. It is certainly true that a number of studies have focused on the register used by specific groups in such particular discussions, for example, parents talking baby talk (Ferguson, 1977), sports announcers (Ferguson, 1983), students (Reppen, 2001), researchers (Conrad, 2001), and so forth. Also, Trudgill (1996) and Stojicic (2004) prefer to restrict the term jargon as a particular language used by the members of particular profession or interest. Register is viewed as an occupational language of a group of specialists which functions as technical words used in the discussion about

their specialty that is shaped by the work environment.

Most speakers employ register which they use in different situations. In a certain respect, the use of register is intended to meet communication needs among specialists in the field as register represents a variety of language that is based on its function for specific purposes. In petroleum field, the engineers use register as technical terms which are specific to their field. For example, the term '*spaghetti*' (general field) refers to pasta in narrow long rods compared to '*spaghetti*' (petroleum field) which refers to any kind of tubing or pipe with a very small diameter. Only insiders (i.e., petroleum engineers) know the meaning of those terms. On the contrary, outsiders (i.e., common people) would find it difficult to understand the terms as they do not have sufficient knowledge about the meaning of those specialized terms. From the above case, we know that the register tends to be associated and can be understood only by a particular group of people in a certain situation. The example above indicates different functions of their uses as the terms are spoken in different settings and are also addressed to different speakers. Although studies on register have been greatly conducted in such particular discussions, there is not much analysis on register used by particular group of people and profession in a specific field, such as in the petroleum field. Therefore, the writer is interested in identifying the register which is commonly used in the conversations among petroleum engineers (Indonesian engineers and their foreign clients).

This present research aims at identifying the register used in the conversations among petroleum engineers by examining the lexical and grammatical variations which are viewed from the aspects of the field, the tenor and the mode of discourse.

The register analysis in this present research will be based on the framework of *Systemic Functional Linguistics* (SFL) as developed by Halliday and Hasan (1989), who identify three variables of situations that affect the way people use register, namely: the field of discourse, the tenor of discourse, and the mode of discourse. The data will be analyzed as follows:

1. The field of discourse includes the analysis of an experiential domain, a goal orientation (short term vs. long term), and a social activity.
2. The tenor of discourse involves the role relationships among the participants which varies according to an agentive role, a

social role (hierarchic vs. non-hierarchic), and a social distance (minimal vs. maximal).

3. The mode of discourse consists of three main concepts, such as a language role (ancillary vs. constitutive), a channel (graphic vs. phonic), and a medium (spoken vs. written).

METHOD

Research Design

The register analysis in this present research employed a qualitative descriptive analysis. The descriptive analysis dealt with the examination of lexical and grammatical variations of the register. The data was a face-to-face recorded interaction among petroleum engineers engaging in the conversations.

Participant

The participants were seventeen petroleum engineers, of which nine Indonesian engineers and eight foreign engineers of supplier companies as business clients. The participants are coming from various ethnicities in Indonesia (i.e., Javanese, Manado and Palembang), various countries (i.e, China, Korea, the Philiphines, and Singapore), as well as various backgrounds of education (i.e., master degree of petroleum/mechanical engineering and petroleum industry, and bachelor degree of technical/mechanical engineering). The average age of participants is around 30 to 50 years old.

Measures and Data Analysis

The data was collected through several procedures, namely: 1) data recording, 2) data transcription, 3) data codification, 4) data analysis, and 5) conclusion. In the stage of data recording, the writer took the recordings of face-to-face interaction among petroleum engineers engaging in the conversations by using an audio device of SONY DSC-W270. The recorded conversations were taken directly at their work place (at the head office and at the warehouse) for all members of participants together discussing their specialty in the meetings with various topic discussions of drilling operation. In total, the length of time of the recordings was ten hours from fourteen audio recordings, of which six recordings were taken in the meetings at the head office and eight recordings were taken in the meetings at the warehouse.

Once the recordings were taken, the writer herself transcribed the data of the conversations by describing the presentation of transcription conventions into several steps, namely: a) numbered every example to refer to

specific lines as the readers could easily find the examples and check the context they require. This process of numbering was an effort to ease the writer to indicate the interaction orderly, b) used transcription conventions to transcribe a stretch of speech relied in the interaction. The transcription conventions were aimed to capture the situation of talk as well as to inform readers of what situation happened in the interaction, and c) abbreviated every participant's names of the research as it is beneficial for readers to know the participants who involve in the interaction in each recording. For the sake of privacy, the writer identified the names of every participant (Indonesian and foreign engineers) by mentioning their initials.

In coding the data, the writer described and marked the data by giving the codes to make the classification of each data which comprised of several remarks, such as the names of the recordings on every topic discussed, the length of time for each recording, the topic discussions being held in the conversations, and the types of contexts of speech being used in the conversations. The data was analyzed to see the three parameters of register (the field, the tenor, and the mode of discourse) play their role in the situation of talk. The field of discourse was focused on the lexical analysis (i.e., nouns, verbs, object referential, and acronyms). The tenor of discourse was focused on the role relationships among the participants. The mode of discourse was focused on the grammatical analysis. In the last stage, the writer drew a conclusion which was presented in tables.

FINDINGS

The Field of Discourse

The *field* of discourse refers to the topic of the linguistic exchange and comprises three main discussions, such as an experiential domain, a goal orientation, and a social activity.

Experiential Domain

The main focus of this experiential domain analysis is only on the recurrent specific lexis used in the petroleum field. This lexis discussion consists of four types of word classes, that is, nouns and verbs (specifically single-word and compound/phrasal-word forms), object referential lexis, and acronym.

Example (1) is given to illustrate how the field of discourse describes the context of situation. There are two Chinese engineers (i.e., *L* and *H*), and one Indonesian engineer (i.e., *DS*) talking about low floss measurement in their meeting.

R2/36:08/LowFloss_Measurement/MT G-WHS

DS: [[= but before we must clean the connection of rathole and mousehole from *fish*. Actually it's so difficult because the hole full of mud cake, so that **spaghetti** of the *pig* will break out =

L: [[Well, don't worry, change the **spaghetti** then check it because=

DS: We see if there's no more cement =

L: [[Yeah, in the connection of rathole and mousehole =

H: We see it from the connection of Christmas tree =

DS: [[= from the hole, rathole and mousehole, there is low floss right? =

L: [[= Christmas tree set per **line** then ask derrickman to draw it =

DS: = I know that we only cut a little for the **spaghetti**. =

L: [[Yeah I know (.) we need focus to handle =

DS: Pak Ilyas has found the expert to control the system =

L: [[Ok, well that's good (.) so you only have to prepare the **line =**

DS: I have, drilling **line**, drilling pipe and drill collar is fine. =

((two Chinese are discussing))

DS: [[= I already power the bit and shirttail use new **spaghetti** on the <u>body</u>, the <u>neck</u> and also the <u>shoulder</u> but I am not sure if deadline =

Note:

- Underline indicates the nouns designating the parts of physical structures.
- Bold indicates the nouns designating the nature.
- Italic indicates the nouns designating the animals.

In the category of single-word nouns, the high frequency of nouns identified in example (1) represents the names of nature which could mislead in meaning if the words are interpreted in two distinct concepts, that is, in general concept compared to the oil field concept. The term *'line'*, in general is referred to the length of thread, rope, or wire, while in oil field the term *'line'* is defined as any length of pipe through which liquid or gas flows. Another example, the term *'spaghetti'* is described as pasta in narrow long rods as people assume in common. On the other hand, the petroleum engineers interpret that term as any kind of tubing or pipe with a very small diameter.

The number of nouns provided in the example above also represent the names of animals of which the meaning

is quite different to be interpreted in general concept compared to the oil field concept. In general concept, the terms *'fish'* and *'pig'* refer to the animals of fish and pig. Common people know that the term *'fish'* refers to a cold blooded animal living wholly in water, while the term *'pig'* refers to an animal without fur that does not chew grass. Meanwhile, in oil field, the engineers describe the former term as any kind of object that is left in the wellbore during drilling or work-over operations and that must be recovered before work can proceed, while the latter term is referred to a device that is inserted into a pipeline for the purpose of cleaning.

Accordingly, the names of nouns in this category of single-word form also designate the names of parts of physical structures. The meaning of these features could create misinterpretation for outsiders who are not directly involved to the subject matter of the oil field. For outsiders, the terms *'body'*, *'neck'*, and *'shoulder'* is assumed as parts of physical structures of a human being or animal. In contrast, insiders define all these terms as parts of drill pipe. The term *'body'*, for instance, is indicated as part of a drill pipe which runs from the outer corners of the cutting lips to the shank or neck. The term *'neck'* is referred to part of a furnace of a drill pipe where the flame is contracted before reaching the stack. The following term, *'shoulder'*, is defined as the flat portion machined on the base of the bit shank that meets the shoulder of the drill collar.

The table below shows the number of specific nouns in the single-word form which designate the nature, the animals, and the parts of physical structures.

Table 1. Single-Word Nouns

Single-Word Nouns	
Designating the Nature	*line, spaghetti*
Designating the Animals	*fish, pig*
Designating the Parts of Physical Structures	*body, neck, shoulder*

Illustration (2) is also given to describe how the field of discourse plays its role in defining register within the context of situation being used. There are three speakers participating in the exchange, namely: one is from the Philiphine (i.e., *G*), and two other speakers are from Indonesia (i.e., *LH* and *FF*). In this situation, the speakers are talking about spare parts for drilling.

R13/29:02/Spare Parts for Drilling/MTG-WHS

(2)FF: [[= the gooseneck sling attached to christmas tree, =

LH: Yeah Gerald, past for this branded, its pattern will slightly have a leak and banana peel around the

metals of the horsehead pumping connection. = I'm not sure the bits and the shirttail ready =

G: Yeah (.) I think we need more davisiter and dessander =

FF: I see (.) the rings are already set and calibrated =

G: = 80% of the mud cakes will be disappeared =

FF: = You said that the deadline need more rings right?

G: = we can use all the things = we can run the christmas tree =

LH: = The deadline cannot draw such load, because the deadman also don't work.

G:= For sure, I will stand by in the drawworks, looking at the system. =

In the category of compound nouns, the vast majority of nouns found in the analyzed data also represent the names of nature. The meaning of each feature is distinctively interpreted by two different communities (i.e., common people vs. oil community) as those two communities have their own interpretation. The term *'christmas tree'*, in general concept refers to a tree which commonly used for Christmas celebration, while in the oil field, that term refers to the conbul valve and chokes assembled at the top of a well to control the flow of oil and gas after the well has been drilled. Accordingly, the word *'shirttail'* is defined as under part of shirt as people thought in common, while oil community identifies the word as part of a drilling bit on which the cone is anchored. Another example, the word *'drawworks'* is identified as an action of drawing something as people thought in general, while the oil community specifically describes the term as part of drilling house where the driller controls drilling machine operation. For people in common, the word *'deadline'* is defined as fixed date for finishing (doing) something, while oil community finds it as the drilling line from the crown block sheaves to the anchor. The name is so called because it does not move. Also, the word *'deadman'* is generally referred to as person who is no longer living as people thought in common. Meanwhile, in oil field, the word is translated into a buried plate, wall, or block attached at some distance from and forming an anchorage for a retaining wall.

The words *'mud cake'* and *'banana peel'* are another instances of unique register found in this category. The words tend to be similar in meaning to something that can be eaten as common people usually interpret. The meaning of the word *'mud cake'* is often confusing as the final word *'cake'* of *'mud cake'* reflects an unclear concept since there is no such cake made from

'mud' to be eaten in common. On the other hand, the oil community distinctively refers the word to the sheath of mud solids that forms on the wall of the hole when liquid from mud filters into the formation. Similarly, the word *'banana peel'*, could also mislead in meaning. In the oil field, the word refers to a thin sheet of steel created when a wash-over pipe's rotary shoe grinds into the casing. And of course, common people mislead in meaning as they commonly know that *'banana peel'* is a peel of the fruit "banana".

Instance (3) is also examined to show how the field of discourse is used to analyze the context of situation in which it is used. The participants consist of two Indonesian engineers (i.e., *FF* and *LH*), and one engineer coming from the Philippine (i.e., *G*). In this situation, the participants have a meeting in the discussion about drilling rig safety.

R10/21:03/Drilling Rig Safety/MT-G-WHS

(3) G: I see now as the (.) the safety for running the operation, then we will monitor the **doghouse** and warehouse as a whole = you know like **horsehead** unit, **cat cracker** unit is very sling connection =

LH: Yeah Mr. Gerald, I also ask crew don't draw much load to the up side of **monkey board**, I'm worried the deadline and deadman will brek out. **Catline** seems not ok in the unit 4 of **cat cracker** (.) yeah you know the **cathead** may fell off. =

G: [[= you start calibrating and testing the sling of **gooseneck** =

FF: I think I will add 10 inch per line of each connection.

G: [[Yeah it's better, because we don't know **catline** still work or not if the **cathead** feel off (.) it will damage the **cat cracker** =

FF: [[Ok Mr. Gerald, I will make the schedule of monitoring the rig area.

((two Indonesians are discussing))

G: The degree of temperature on **rathole** and **mousehole** = the units and equipments, traveling block, **catline**, pulley the **cathead** that complete for running the operation.

LH: I have to clarify to Migas and Pertamina, we can clarify all technical =

G: [[= so that we don't find any leak on the **rathole** or **mousehole** connection and power the deadman =

LH: The capacity of the rig may not maximum =

FF: [[Yeah, so that's the maximum in single line for 1 ton

LH: [[Hmmm (.) yeah we add more single line.

((two Indonesians are discussing))

G: = The chief man and APV team should explain this to all crew.

FF : [[We already add the crew to monitor the safety in drilling rig area.

LH: [[So I am just trying to draw the hand tools to the **monkey board** then leave it on the **catwalk** as the unit running straight down =

The amount of nouns found in the category of compound nouns also represents the names of animals. Those nouns are often confusing as their meaning could mislead when they are interpreted in two distinct concepts. In general concept, the terms *'cat cracker'*, *'cathead'*, *'catline'* and *'catwalk'* are generally known as the things that are related to the animal 'cat' as common people interpret. The relation could be reflected on its physical shape, its name, and so forth.

The first term *'cat cracker'*, for example, commonly refers to thin biscuit (as eaten with cheese) for cat. The second term, *'cathead'*, is generally identified as the head of the animal 'cat'. Meanwhile, the third term *'catline'* tends to be meaningless if common people translate or transfer the meaning literally since the word cat followed by other word (i.e., line) is not clearly defined as people don't know which 'line' is meant. The fourth term, *'catwalk'*, is identified generally as a pathway and it seems to be also confusing when common people interpret the expression as it is describing the cat that is walking around. On the other hand, in the oil field concept, the engineers identify those above terms in quite distinct concepts of description. The term *'cat cracker'* is identified as a refinery unit where catalytic cracking is done. The other term, *'cathead'*, refers to a spool-shaped attachment on the end of the cat-shaft, around which rope for hoisting and moving heavy equipment on or near the rig floor is wound. Also, the term *'catline'* is described as a hoisting or pulling line powered by the cathead and used to lift heavy equipment on the rig. Lastly, the term *'catwalk'* is interpreted as the ramp at the side of the drilling rig where pipe is laid to be lifted to the derrick floor by the catline.

Other instances, the terms *'gooseneck'* and *'horsehead'* are said to be unique since their names are similar to the parts of physical structures of the animals, that is, the neck of *'goose'* and the head of *'horse'* as the meaning is frequently thought by common people.

In the oil field concept, the terms are transferred contrastively to those in general concept. The former term refers to a pipe or other device between the rotary hose and the swivel which having a curved or bent shape resembling that of the neck of goose, while the latter term refers to the generally horse head shaped steel piece at the front of the beam of a pumping unit to which the bridle is attached in sucker rod pumping. Outsiders may interpret the terms *'mousehole'* and *'rathole'* as holes of the animals *'mouse'* and *'rat'* as the openings for these animals to enter. Both terms refer to the same animal, that is, "mouse" and "big mouse" (i.e., rat) which the difference is relied only on its size. The term *'mousehole'* is then identified as the hole which is smaller than *'rathole'*. Meanwhile, insiders contrastively describe the term *'mousehole'* as an opening in the rig floor, usually lined with pipe, into which a length of drill pipe is placed temporarily for later connection to the drill string, whereas the term *'rathole'* refers to as a hole in the rig floor, some 30 to 40 feet (9 to 12 metres) deep. Generally, outsiders assume the word *'doghouse'* as a house for dog to stay, whereas insiders specifically find the word as a small enclosure on the rig floor used as an office for the driller and as a storehouse for small objects. Similarly, the word *'monkey board'* is commonly assumed as a board of the animal *'monkey'* if it is translated literally that would be meaningless since the word *'board'* is not clearly identified. Meanwhile, petroleum engineers find the word as the derrickhand's working platform as pipe is run into or out of the hole.

The table below shows the numbers of nouns in the compound form of which the names are related to nature and related to animals.

Table 2. Compound Nouns

Compound Nouns	
Designating the Nature	*christmas tree, mud cake, deadline, deadman, drawworks, shirttail, banana peel*
Designating the Animals	*cat cracker, cathead, catline, doghouse, horsehead, gooseneck, rathole, mousehole, monkey board*

Example (4) is given to illustrate how the field of discourse is used to analyze the context of situation. The participants consist of two Indonesians (i.e., *HE* and *SR*), and one Singaporean (i.e., *DT*). In this situation, the participants have a meeting in the discussion about down hole camera.

R8/36:47/Down Hole Camera/MT-G-HO

(4) HE: [[= watch the water or gasoline produced **run** wide.

SR: From formation?

DT: From the formation = what I'm **drawing** for next =

HE: For chevron?
DT: [[Yup, that the cable, the tools, of the fiber optics =

HE: [[Ya, ya, okay.

DT: I don't wanna get I don't wanna compete with **fishing** tool company users, you guys are not my bad. **=** then what we could have done is going to small : : : of **fishing**, =

SR: [[Ya ya ya (.) okay.

DT: = we can **run** the DTS, alright, see it guys, the DTS that we can **run** to give my good reservoir analysis =

SR: [[Ok for the next job change of Star Energy Magma =

DT: [[Well (.) if you guys have the motor conductor cable here.

SR: [[Yes I have 3.16. Is it enough to your tool with ((pause))

DT: = I need to look at electro pocket to restrict the 3.16, =

SR: David, to know one roller 3.16, and one roller 5.16?

DT: 5.16 is work great but how what kind of pressure on the well? =

((two Indonesians are discussing))

SR: pressure because we want to **kill** the well first, =

In the category of single-word verbs, the high frequency of the specific recurrent verbs largely indicating the technical action process. For example, the term *'running'*, in general concept contains two assumptions. First, the term is defined as the act of moving with quick steps, faster than when walking. Second, the term is identified as the act of managing a business. Meanwhile, in the oil field, the term *'run'* is defined as the act for starting the work or operation. The term commonly collocates with some nouns as known in the oil scopes of work, namely, *'oil tools'* (such as gooseneck, horsehead, pig, christmas tree, etc), *'connection'*, *'panel'*, *'engine'* and *'system'*. In general concept, common people interpret the term *'drill'* as the act of training something or someone by means of drills, while the term *'trip'* is identified as the act of having a journey. In the oil field, the engineers find the term *'drill'* as the act to bore a hole in the earth to find and remove subsurface fluids such as oil and gas. Meanwhile, the term *'trip'* refers to the act of hoisting the drill stem and returning it to the wellbore. As known in the oil field, the term *'drill'* usually collocates with some nouns, such as *'well'*, *'pipe'*, *'hole'* and *'hole connection'* (the connection of mousehole and rathole), while the term *'trip'* commonly collocates with some nouns, such as *'pipe'*, *'pipe lines'* and *'well'*.

Generally, common people define the verb *'draw'* as the act of drawing

something, while the verb *'fishing'* refers to the act of catching the animal 'fish' on the sea. Specifically, petroleum engineers indicate those two terms in different concepts. In the oil field, the former verb is defined as the act of hauling a load, while the latter verb is referred to the procedure of recovering lost or stuck equipment in the wellbore during drilling or work-over operations. The verb *'draw'* usually collocates with such words as known in the oil field, namely *'fiber'*, *'fluid'* and *'load'*. Meanwhile, the verb *'fishing'* commonly collocates with the word *'hole'* in such topic discussions in oil field. Accordingly, the verb *'kill'* is indicated as the act of putting (person or animal) to death as common people frequently assume, while petroleum engineers identify it as the act of stopping a well from producing oil and gas so that reconditioning of the well can proceed. From the description, we notify that the verb seems familiar with the act of stopping something with the difference is relied only on the objects. The object related in oil field concept is about to stop the operation of well bore which is distinctively described by people in common. This verb frequently collocates with the word *'well'* in such particular discussions in the oil scopes of work.

Illustration (5) is also given to describe how the field of discourse plays its role in identifying the register within the context of situation being used. There are three speakers involved in the exchange, namely: one is from the Indonesia (i.e., *DS*), and two other speakers are from Chinese (i.e., *L* and *H*). In this situation, the speakers are talking about down hole camera.

R1/22:36/Down Hole Camera/MTG-WHS

(5) DS: With fishing tool company users, they have a lot of fishing hole so that a bunch of wells were not **shut in**. This was actually going of wireline system. Like Petronas in Malaysia, bunch of wells were **run in**, only a little…yeah, maybe only (.) one or two were **shut in** there. = No engine are **shut down**, check everything especially to your camera in a hole. =

L: That's good. Pertamina will provide infocus so that the fiber =

DS: I see. And which unit we run for MBD?

L: MBD (.) actually, they still not have received it yet. =

DS: Which one?

L: For the connection (.) the connection of Christmas tree =

DS: [[Ya, we will make sure the connection. =

L: Sure, but it's before banana peel on the socket?

DS: The issue of the pumping system in the horsehead will be renewed =

H: Wow, very soon. How do you know?

DS: = slings up to the horsehead and other pumping units before we **run in** the well. All must ok for the **rig up**. =

((two Koreans are discussing))

In the category of phrasal-word verbs, the vast majority of verbs found in the data are also largely indicating the technical action process. In general concept, the term *'rig up'* refers to the act of providing (a person) with necessary clothes, while in the oil field, the term *'rig up'* refers to as the act of preparing the drilling rig for making hole, that is, to install tools and machinery before drilling is started. As known in the oil field, the term usually collocates with some words, such as *'system'* (pumping system, etc), *'construction'* (choke manifold, etc), *'unit'* (such as slick line, cat cracker, horsehead, etc.) and *'oil tools'* (such as crown block, traveling block, catline, cathead, etc.). Outsiders define the term *'shut down'* as the act to stop working (of a factory, etc), whereas insiders find the term as the act to stop work temporarily or to stop a machine or operation. The term usually collocates with the word *'engine'* in such particular topics in the oil field.

Another instances, the term *'run in'* and *'shut in'* also contain different meaning viewed in two quite distinct concepts. Generally, the former term refers to the act of taking (usually *a violator*) into the jail as common people assume. Meanwhile, petroleum engineers specifically describe the term as the act of opening the well by going into the hole with tubing. Accordingly, people in common identify the latter term as the act of covering something (gas, etc) while petroleum engineers describe it as the act of closing the valves on the well so that well stops producing. In the oil field, both terms are specifically used in relation to the act towards the well as the object of the verbs (i.e., opening and closing) not in relation to those of people thought in common. Those two terms frequently collocate with the word *'well'* as known in the oil field.

The table below shows the number of verbs in the category of single-word and phrasal form of verbs.

Table 3. Verbs

	Verbs
Single-Word Verbs	*running, drill, trip, draw, fishing, kill*
Phrasal-Word Verbs	*rig up, shut down, run in, shut in*

Other feature in the register also appears in the domain of object referential words which recur in the conversations of petroleum engineers. The speakers have the same interpretation in defining the object-referential words, such as *'Popular', 'Time', 'Shepherd',* and *'Cameron'* which refer to the brands of oil tools especially for blow out preventer unit; and *'Caroline'* which refers to the pumping system. Acronyms are other instances of feature found in the register which all speakers share the same frame of reference of pointing the objects they involve with. The speakers know the definition of the acronyms as known in the oil field, such as *'BOP'* and *'PDSA'* which refer to the oil tools connections; *'DTS'* and *'MBD'* which refer to the reservoir connections; *'HP'* which refers to the power capacity of unit; *'APV'* which refers to the drilling inspection; and *'PPS'* which refers to the low floss measurement.

Goal Orientation

The purpose of doing the technical action process in such operations of the petroleum field is considered high since the operations needs an immediate attention to overcome. Therefore, the purpose of giving instructions and technical commands is also considered high in order to make the technical process is well completed. Meanwhile, the purpose of giving the technical information is considered low happened when there are some particular conditions or situations needs to be reported. Thus, the goal orientation is considered as both a short and a long term goal orientation.

The illustration below shows the connection among those three goal orientation of language associated by petroleum engineers in doing their job. The illustration is taken from the conversation among Indonesian engineers (i.e., *MK*, *AG* and *SW*) and their client from Korea (i.e., *W*) when they are discussing about drilling rig safety in a meeting.

R9/26:17/Drilling Rig Safety/MTG-WHS

(6)W: Last night another crew surveyed direct already, the generator and drawbox is ok = **check everything**, maybe you left something =

AG: Something?

W: Something you left in the derrick, you **check and check again and you check all the sling** goes back, maybe at night the light not good =

AG: So the stop still 30.000 (.) maybe we plan to send to truck =

W: = **you send you tell the real of use an email to Citic**. Right now, the fuel tank the level is too low.

SW: Ok ya ya (.) 5 thousands is still, maybe more than ten thousands =

AG: Still can to (.) but but ok ok.

W: So this morning we hope you can (.) *we need stabilize* (.) *yesterday I turned a reel yesterday in here* =

Note:

- Underline indicates the technical information.
- Bold indicates the technical commands.
- Italic indicates the technical action process.

Social Activity

All participants in this analysis are involved in the exchange of the conversations when they discuss such particular topic discussions of petroleum field in their meetings. All the activities socially represent the communicative need from each conversation of petroleum engineers (i.e. *to give the technical information, technical commands, as well as the technical action process*).

The Tenor of Discourse

The *tenor* of discourse refers to the role relationship between the participants. The *tenor* of discourse analysis in this present study involves several discussions, such as agentive role, social role, and social distance.

Agentive Role

The agentive role among the participants is said to be equal as they are business clients between supplier and customer. All participants share the same reference of words that are specific to the field which function as technical terms used as their communicative tool, such as the use of nouns, verbs, object referential lexis, and acronyms.

Social Role

In this social role analysis, the attention is given to the level of expertise discussion as one of the important factors in determining the participants select the language. Illustration (7) shows how the tenor of discourse plays its role in defining register within the context of situation. There are three engineers talking about drilling rig safety in their meeting, that is, one is from the Philippines (i.e., *G*), and two others are from Indonesia (i.e., *LH* and *FF*).

R10/21:03/Drilling Rig Safety/MT-G-WHS

(7) G: = Crew who is smoking <u>please</u> not to smoke in the rig area because it's dangerous to the pressure of temperature

especially from the biggest connection, you know like horsehead unit =

LH: Yeah **Mr. Gerald**, I also ask crew don't draw much load to the up side of monkey board, I'm worried the deadline and deadman will brek out. Catline seems not ok in the unit 4 of cat cracker =

G: [[= we better test dan retest to make the connection become powerful (.) or you start calibrating and testing the sling of gooseneck =

FF: I think I will add 10 inch per line of each connection.

G: [[Yeah it's better, because we don't know catline still work or not if the cathead feel off (.) it will damage the cat cracker so the the maybe will impact the deadline and deadman not running well.

FF: [[Ok **Mr. Gerald**, I will make the schedule of monitoring the rig area.

((two Indonesians are discussing))

Note:

- Underline indicates the use of politeness marker.
- Bold indicates the use of formal address form.

In this situation, two participants are managers, i.e., *'G'* (45) and *'LH'* (41). They have the same level of education background, that is, master's degree in petroleum and mechanical engineering while the other one is as a chief operator i.e., *'FF'* (33) who has lower position than manager position and was graduated from bachelor degree of technical engineering. Therefore, the level of their expertise is different. Two participants (*G* and *LH*) seem to be dominant in doing the exchange within the conversation and can be said more knowledgeable as they have more experience rather than (*FF*) who seems to be less knowledgeable as *FF* has not had much experience in the oil field scopes of work so that *FF* does not dominantly speak in the exchange of conversation. The more knowledgeable speakers (i.e., *G* and *LH*) tend to do the exchange by giving detailed explanation and response over the discussion in a long turn taking, whereas the less knowledgeable speaker (i.e., *FF*) tends to do the exchange by only giving concise feedback in a short turn taking.

Instance (8) is also given to show how the tenor of discourse is used to analyze the context of situation. There are two Indonesians (i.e., *HE* and *SR*), and one Singaporean (i.e., *DT*) discussing about down hole camera in their meeting.

R8/36:47/Down Hole Camera/MT-G-HO

(8) DT: [[= So, then I'd like send the cd together, send it to you guys, and you guys look all the data. =

HE: [[Ya, ya, okay.

DT: I don't **wanna** get I don't **wanna** compete with fishing tool company users, you guys are not my bad. =

SR: [[Ya ya ya (.) okay.

DT: = see it guys, the DTS that we can run to give my reservoir analysis =

SR: [[Ok for the next job change of Star Energy Magma, *David*, you want to use motor conductor or no, either fiber optic cable for your camera?

DT: [[Well (.) if you guys have the motor conductor cable here.

SR: [[Yes I have 3.16. Is it enough to your tool with ((pause))

DT: = I need to look at electro pocket to restrict the 3.16, =

SR: *David*, to know one roller 3.16, and one roller 5.16?

Note:

- Underline indicates the use of vernacular form of pronoun.
- Bold indicates the use of vernacular form of verb.
- Italic indicates the use of nick name.

In this situation, all participants are managers coming from various backgrounds, namely: one Singaporean *'DT'* (48), and two Indonesians *'SR'* (48) & *'HE'* (52). Everyone participating in this exchange has undergone such experiences in the oil scopes of works, especially in drilling operations. The participants also have the same level of education background, that is, master degree in petroleum engineering and petroleum industry. From their background of education and experience, all participants are said as the experts in the oil scopes of works. Therefore, they seem to have the same level of petroleum knowledge as it is noted that each speaker has a balance long turn taking in every stretch of speech in the conversation, which means that all participants are dominants in doing the exchange in the interaction.

Social Distance

The social distance of participants in the interaction is considered minimal which is highly characterized by the use of informal form of expressions, for example, the use of vernacular form of verb *'want'* which is pronounced by *'wanna'*; the use of vernacular form of pronoun *'guys'*; and also the use of nick name *'David'* from the full one *'David Twitt'*. Besides, the less use of formal

expression is also found in the data as it is influenced by the un-equality of the level of education background, age, job position as well as experience of the speakers, for instance, the use of formal address form '*Mr.*' and the use of politeness marker "*please*".

The Mode of Discourse

The *mode* of discourse refers to the way in which the exchange is transmitted. The *mode* of discourse analysis includes three main discussions, that is, language role, channel, and medium.

Language Role

The attention given to this language role analysis is on the occurrences of tense. As far as tense is concerned, present tense is regarded as the unmarked form of the analysis, as it represents a high frequency of all the occurrences of verbs marked for tense. The non-present tenses such as past simple, present perfect and future simple are occurred in both active and passive sentence. Example (9) shows how the mode of discourse describes the register within the context of situation being used. There are three speakers involved, namely: one is from the Indonesia (i.e., *DS*), and two other speakers are from China (i.e., *L* and *H*). In this situation, the speakers are talking about down hole camera.

R1/22:36/Down Hole Camera/MT-G-WHS

(9) DS: Mmm (.) **we have elevated new types of tools and new process**.

L: DTS, fiber optic camera is available =

DS: With fishing tool company users, they have a lot of fishing hole so that <u>a bunch of wells were not shut in</u>. This was actually going of wireline system. Like Petronas in Malaysia, <u>bunch of wells were run in</u>, only a little (.) yeah, maybe only (.) one or two were shut in there. = <u>No engine are shut down</u>, check everything especially to your camera in a hole. =

L: That's good. *Anyway, Pertamina will provide infocus* so that the fiber optic can run. And there are many data sheets for 4.25 our cable stock. *The engineer will tell* you later.

DS: I see. And which unit we run for MBD?

L: MBD (.) actually, **they still not have received it yet**. =

Note:

- Underline indicates the past simple.
- Bold indicates the present perfect.
- Italic indicates the future simple.

Channel

The channel used in this present

study is all in the spoken mode (phonic) with visual contact which is then recorded and transcribed. The spoken mode of the register is from the meetings of such discussions in particular topics as known in the oil field.

Medium

For the purpose of this study, the writer does not discuss the types of cohesion occurring in the data because many of the participants speak ungrammatically. The attention of this medium analysis is only focused on the use of endophoric reference and pronouns. As illustrated in many examples given, the medium of the register of the conversations among petroleum engineers is excessively characterized by the use of endophoric reference (*this*, *the connection*, *the camera*, *the procedure*, *the engineer*, *the process*, *the pumping system*, and *it*); and the use of pronouns (*I*, *you*, *we* and *they*).

DISCUSSION

It is observed that one's speech used in communicating among others not only reflects and expresses the aspects of identity, such as age and addressee, but also indicates the context in which the language is used. With respect to the *field* of discourse, findings show that in the experiential domain analysis, all terms of register which are commonly used in the oil field function as technical terms used in discussing their specialty. There are six types of technical terms found in the analysis, namely: 1) the single-word nouns; 2) the compound nouns; 3) the single-word verbs; 4) the phrasal-word verbs; 5) the object-referential words; and 6) the acronyms. The goal orientation is considered as both short and long term goal orientation which appears in three major kinds of technical matters, that is, the technical action process, technical command, and technical information. The social activity is exchange.

Interestingly, the features of terms in the category of nouns are mostly said to be unique as they could mislead in meaning viewed from two distinct concepts, that is, in general concept compared to the oil field concept. The uniqueness of the features is largely found in the category of single-word form and compound form of nouns which is related to nature (*line, spaghetti, christmas tree, mud cake, banana peel, deadman, shirttail, etc*), related to animal (*fish, pig, cathead, catline, doghouse, horsehead, mousehole, monkey board, etc*), and related to parts of physical structures (*body, neck* and *shoulder*).

With respect to the *tenor* of discourse, the agentive role among the speakers is said to be equal as they are business clients between supplier and

customer. The social role among participants is considered non-hierarchic. There are two kinds of level of expertise of the speakers defined in this social role analysis, that is, more knowledgeable speakers (experts) and less knowledgeable speakers (non-experts). The more knowledgeable speakers *(W, DS, L, IS, SR, GR, G, LH, HE, DT, Y, & C)* were graduated from master degree in petroleum/mecha-nical engineer-ing as well as petroleum industry and have the same job position as managers in their workplace. Those speakers tend to do short pauses in a long turn taking, give detailed explanation in answering the questions, give detailed feedback or response, and also use the terms of register more frequently in the interaction. In short, they are dominant to do the exchange in the conversations. Meanwhile, the less knowledgeable speakers (*FF, AG, H, MK, & SW)* were graduated from bachelor degree in technical/mecha-nical engineering and have the same job position as chief operators in their workplace. Those speakers often do long pauses in a short turn taking, give brief questions, give concise feedback, and also do not use the terms of register frequently during the interaction. In short, they are not dominant to do the exchange with other participants in the interaction.

The findings show that the use of a large number of register is found in the utterances of more knowledgeable speakers rather than in the utterances of less knowledgeable speakers which may be due to several factors, the include the level of their background of education, their level of expertise, age, job positions, and their experience in the oil scopes of works. The social distance among participants tends to be minimal which is excessively characterized by the use of informal expressions. Findings also show that most of the speakers involved in the exchange (Indonesian and foreign engineers) speak ungrammatically, except the one who is native speaker of English, that is, the Singaporean.

With respect to the *mode* of discourse, the language role exists equally of both constitutive and ancillary which appears in the three major forms of non-present tenses, that is, future simple, past simple, and present perfect. The channel in this present study is all in the spoken mode (phonic) with visual contact which is then recorded and transcribed. The spoken mode of the register is from the meetings of such discussions in particular topics as known in oil field. The medium is excessively characterized by the use of endophoric reference (*this*, *the connection*, *the camera*, *the procedure*, *the engineer*, *the process*, *the*

pumping system, and *it*) and the use of pronouns (*I*, *you*, *we* and *they*).

CONCLUSION AND SUGGESTION

The results of the study are expected to be as a contribution to the development of language education particularly of the vocabulary improvement. The results are also expected to give an important insight and valuable information for educational practitioners in investigating the theoretical underpinnings of language variations. This present research deals with the identification of register where the lexical and grammatical features analysis is as its main focus. Once the analysis is investigated and made in journal, the arrangement of dictionary is prior as its output of the lexical and the grammatical features themselves as its database. This present research deals with the sociolinguistics approach where the descriptive grammar is used to describe the phenomena in the discourse level. Thus, such approaches might be also linked to several other perspectives of disciplines, such as ESP and corpus-based approach to foster educational practitioners in increasing the innovation in teaching and learning process mainly of vocabulary usage in the classroom context.

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