

Content Analysis of Incident Reports in the Oil and Gas Industry: A Case Study

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ABSTRACT

This on-going study is carried out in order to identify the contents of incident reports obtained from an oil and gas contracting company. This is done through Interdiscursivity approach (Fairclough, 1992) by analyzing fifteen copies of summary of incident reports obtained from the company which was responsible in building turrets its international oil and gas clients. Incident report refers to a report produced when an accident or casualty happens at work. However due to legal constraints, the actual reports were not obtained. Instead, only summary of reports were obtained. Following that, interviews with engineers and supervisors were held in order to investigate further the generic resources (professional cultures and practices, Bhatia 2010) that influenced the production of the reports. However, only seven reports have been analyzed at the time of writing and data from the interview were not analyzed. Therefore, only findings from seven reports will be presented.

Keywords: Interdiscursivity, professional communication, content analysis, oil and gas industry

INTRODUCTION

Professional communication ensures smooth functioning of an organization as it can serve a variety of functions such as to inform, to increase efficiency, to satisfy customers' needs, to improve quality and to create new and innovative products.

While learning to communicate at the workplace could happen outside the classroom, the process could be made more effective and systematic through formal instruction, as in workplace-oriented English for Specific Purposes (ESP) programmes. However, ESP practitioners must understand what is going on in the real world in order to prepare learners to communicate in the professional world. Practitioners need to understand the process of information flow, the message and the parties involved in the communication. More than that, they need to understand the organizational culture and text (Bhatia, 2008), discourse community (Swales, 1990) and community and culture (Widdowson's, 1998).

In preparing learners for professional communication, ESP practitioners need to be aware that one communicative act can be related to many functions. For example, a business letter can contain elements of information on a product/service and its promotion in order to attract potential buyers. Since, communication in the professional world is a highly complex process, ESP practitioners need "to fill the gap" (Bhatia, 1994) between what is taught and what the professional world requires. The gap lies partly in the fact that ESP focuses on "text" (intertextuality) while professional communication focuses on "context" (interdiscursivity) (Bhatia, 2010, p.35). "Intertextuality refers to interrelationships between and across texts while interdiscursivity refers to shared features and resources with other genres, discourses, practices and cultures which surround the production of a written communication" (Bhatia, 2010, p. 35). He further adds that while intertextuality has been widely studied (Kristeva, 1980; Foucault, 1981; Bakhtin, 1986; Fairclough, 1995) interdiscursivity needs closer attention.

Bhatia's statement suggests that professional genres and professional culture should go hand-in-hand in order to facilitate learning and to ensure learners can function effectively in the professional world. Thus, it can be deduced that a communicative act does not exist in isolation. It is highly dependent on aspects such as professional culture and genre which are interwoven in order to realize the act.

Therefore, the following gaps need to be filled: firstly, interdiscursivity needs to be explored further as it has not been "sufficiently developed to investigate some of the complexities we find in discursive and professional practices within genre analytical literature" (Bhatia, 2010: p. 35). He further echoes that professional discourse is one of the less explored areas of genre theory (Bhatia *et al.*, 2013).

Hence, an interdiscursive analysis will produce a better understanding of the complexity of text production in a professional context as it includes a variety of "professional practices" (Bhatia, 2010) which a textual approach may miss out. It will also provide a better understanding for pedagogical practices among ESP practitioners.

Secondly, analysis of text production in a professional context from an interdiscursivity perspective, especially in the oil and gas (O&G) industry as proposed in this study, is still under-researched and no known studies have been attempted in Malaysia. This claim is made based on a survey of articles in ISI-indexed journals for the past five years (2009-2014) such as *Discourse and Communication*, *English for Specific Purposes Journal*, *Journal of Cambridge Studies*, *Sino-US English Teaching*, *CAADAD* and *IBERICA*. Interdiscursivity studies have been conducted on writing practices (Salo and Hanell, 2014), online group buying deals (Lam, 2013), request email (Ho, 2011), legal documents (Bhatia, 2010) and political speech (Foxlee, 2009) but none so far on incident report.

Thus, there is a need to investigate interdiscursivity in order to provide an insight into the O&G industry and engineering field in general as both are highly important sectors in developing countries and producing incident reports is one of the most common activities in the industry.

Therefore, based on the gaps identified, this study will help to shed more light into the notion of interdiscursivity by investigating the complexities that emerge from production of incident report in providing an insight into the industry.

Based on the gaps presented in the previous section, the objective of this study is to generate a framework for the analysis of interdiscursivity of incident report in the oil and gas industry based on Fairclough's (1992) notion of Interdiscursivity. Specifically, this study aims to investigate the interdiscursivity functions present in incident report. Thus, the research question for the study is: What are the interdiscursivity functions found in incident report?

METHODOLOGY

Data for this study were collected from two sources: fifteen summary of incident reports obtained from an oil and gas contracting company and interview with personnel in the Production Department which consisted of engineers and site supervisors.

Incident report refers to a report produced when accidents such as equipment failure, injury, loss of life, or fire occur at the work site. Data from texts will determine interdiscursivity functions of incident reports.

However, at the point of writing, only seven reports were analyzed and presented while data from the interview were not analyzed.

Based on previous studies on interdiscursivity (Salo and Hanel, 2014, (Bhatia, 2010, Lam, 2013, Ho, 2011), similar approach will be adopted for the present study in order to analyze the functions of the reports. Firstly, key words/phrases from the report will be identified. After that, these worlds/phrases will be categorized under certain function/themes. For example, they can be words/ phrases like *preventive safety equipment* which will be classified under the theme SAFETY EQUIPMENT while *escape route preparation, improvement of helicopter evacuation* will be categorized under the theme CORRECTIVE ACTION.

When all functions/themes have been identified, triangulation will be done by some experts in order to validate them.

RESULTS AND DISCUSSION

Based on initial discussion with the Site Manager, it was found that the incident reports were prepared by Site Supervisors. Before a report is submitted, meetings with the Site Manager were held and investigations were conducted among other employees present during the incident.

In cases of injury, the Site Supervisor would notify health care provider for medical attention. In cases of equipment failure, the supervisor would notify the Site Manager through face-to-face discussion or phone call and the Site Manager would notify the manufacturers through email or phone call. It was also found that if compensation had to be made, the insurance company and the legal department will be involved. The Site Manager would present the report during management meeting which is held once

a month. The meeting could be face-to-face or through video conference.

The report was prepared based on a template provided by the clients.

Based on analysis of the reports, the following contents were found in Rzeports 1-7:

1. To describe incident
2. To describe cause of incident
3. To report findings
4. To provide recommendations prevent future incident

Tables 1-7 describe the functions found in each report. Table 1 shows that Report 1 started with describing the incident by detailing what happened:

On 20th February 2014 at approximately 06:00 hrs a leak was reported on the iron Roughneck. At that time, the operation was to break down the BOP (Blowout Prevention) test assembly.

Thus, this function is classified as “Description of Incident” as it described how the incident occurred.

The second function found is “Cause of Incident”. This details how the incident happen.

Three causes were stated for the incident:

- *Energy isolation procedure not followed*
- *Man in line of fire*
- *Inadequate communication.*

The causes stated in the report used listing format and reflected that it was the accepted written norm of the organization.

Another function found in the report was “Preventative Measures” which referred to what the company has done in order to prevent future incident as found in the statement below:

isolated and preserved area for incident, conduct a safety standup to discuss the incidents with all crews on board, Level 1 investigation ongoing and Strict compliance with company policies

Therefore, this report has generated three functions: *Description of Incident, Cause of Incident* and *Preventative Measures*.

Table 1 Functions of Incident Report 1

Report 1	
FUNCTIONS	CONTENTS
FUNCTION 1 <i>Description of Incident</i>	“On 20 th February 2014 at approximately 06:00 hrs a leak was reported on the iron roughneck” At that time, the operation was to break down the BOP test assembly”
FUNCTION 2 <i>Cause of Incident</i>	a. Energy isolation procedure not followed b. Man in line of fire c. Inadequate communication”
FUNCTION 3 <i>Preventative Measures</i>	a. Isolated and preserved area for incident b. Conduct a safety standup to discuss the incidents with all crews on board c. Level 1 investigation ongoing d. Strict compliance with company policies

Table 2 shows the function found in Incident Report 2. Two functions can be detected: *Description of Incident* and *Findings*. The first function described the event which showed could be classified as equipment failure while the second function showed results of the investigation which could be caused by faulty equipment.

Table 2 Functions of Incident Report 2

Report 2	
FUNCTIONS	CONTENTS
FUNCTION 1 <i>Description of Incident</i>	“NM-Safety harness adjusting latch failure. Employee had just climbed down out of derrick after tripping out of hole. Upon releasing from climbing assist employee heard something drop to rig floor. Further inspection, found roller cam to right side torso adjusting strap of harness on the floor. Investigation in progress”
FUNCTION 2 <i>Findings</i>	<ul style="list-style-type: none"> a. All components of the harness showed no sign of wear or rough service b. Spring loaded safety slide came out of buckle c. All harness of this type should be closely inspected giving special attention to the adjusting buckle and the spring loaded tensioner d. Currently contacting (manufacturing company) regarding this incident

Table 3 reflects the functions found in Incident Report 3. There are three functions found in the report: *Description of Incident*, *Findings* and *Recommendations*. Similar to the previous reports, the first function described the incident – when it happened, what happened and how it happened. The findings of the report suggested results of the investigation and can be categorized as the second function. The final function, “*Recommendations*” explains what steps to be taken in order to prevent future incident.

Table 3 Functions of Incident Report 3

Report 3	
FUNCTIONS	CONTENTS
FUNCTION 1 <i>Description of Incident</i>	“Onshore well servicing operation. 2 wire line operators were hand jarring 1 x 3.688” RR type 2 plug set at 105 m RKB (well stability was checked on lubricator and found stable prior the operation). Once the plug got free (“R” lock released from nipple). The plug was quickly sucked down. The winch man not being in position at the brake, the 2 operators were pulled upwards along the lubricator. The first one released quickly the wire clamp. The 2 nd one, who didn’t released the clamp for unknown reason, was lifted during 5 to 6 seconds, and fell from a height of approximately 6 to 8 meters onto the rig floor. The injured person suffered from fractures on both legs, open wound on right leg, fracture on left forearm, and fracture on L1 vertebra.”
FUNCTION 2 <i>Findings</i>	<ul style="list-style-type: none"> a. Chief operator (winch man) left the cabin after applying 600 lbs tension on cable but didn’t fully engaged the hand brake b. Vertical hand-jarring was chosen because horizontal hand-jarring was not possible from the cat walk due to the position of the WL unit on the well pad c. Hand-jarring was started without clearance given by the chief operator (on his way to the rig floor) d. Pre-job safety meeting or Risk assessment briefing was not done
FUNCTION 3 <i>Recommendations</i>	<ul style="list-style-type: none"> a. Instruction to be posted in the wire line unit remembering personnel to not leave the unit unattended b. All rig floor personnel to stay away from cable and wire line operators not allowed to start any job without clearance from Supervisor c. Service company to provide new/revised procedure for hand-jarring operation

Table 4 explains the function found in Incident Report 4. Similar to Incident Report 2, there were two functions found in this report: *Description of Incident* and *Findings*. The functions showed that they were very relevant in reporting incidents and those were the things that the management looked for when incidents occur.

Table 4 Functions of Incident Report 4

Report 4	
FUNCTIONS	CONTENTS
FUNCTION 1 <i>Description of Incident</i>	<p>“On September 11, 2007a scaffold builder was dismantling a scaffold and fell approximately sixteen feet to grade</p> <p>Transported by life flight to hospital with head injury, multiple broken bones and other injuries, Scaffold builder died on September 13, 2007</p> <p>Individual was a certified scaffold builder; 30 years experience”</p>
FUNCTION 2 <i>Findings</i>	<p>a. For type of fall protection worn by Scaffold Builder, hook-to-hook attachment comprises effectiveness of fall protection for two reasons -100% tie off requirement violated when connecting or disconnecting hooks -Hooks used by scaffold builders not rated for this type of connection because latch portion of hook not rated for side impact.”</p> <p>b. Although interviewees offered various reasons for why hook-to-hook attachment is prohibited, all recognized it as improper practice -practice not incorporated into field safety audit checklists</p>

As for Incident Report 5, Table 5 shows three functions prevalent in the report are: *Description of Incident, Findings, and Recommendations*. It is similar to Report 3 which serves three functions as well.

The first function described how the incident happened. The second function “Findings” explained the findings from the incident. This section showed that investigation needed to be done in order to prevent future incidents. It also showed that an incident needed to be reported thoroughly as there were other important events related to the incident such as seeking medical treatment and notifying family member of the person affected by the incident.

Table 5 Functions of Incident Report 5

Report 5	
FUNCTIONS	CONTENTS
FUNCTION 1 <i>Description of Incident</i>	<p>“Upon arriving on location at 8.00 am, the production testing crew knocked on the consultant’s door. As there was no reply, they went inside and found consultant unconscious face down on the floor.”</p>
FUNCTION 2 <i>Findings</i>	<p>“Sometime during the night, the carbon monoxide from the trailer’s furnace exhaust fumes drawn into trailer through cold air intake, overcame the worker.”</p>
FUNCTION 3 <i>Recommendations</i>	<p>a. Incorrect technical design –Design of this furnace system allowed exhaust gases into the fresh air intake</p> <p>b. Inadequate warning systems-Carbon monoxide (CO) devices did not alert the consultant to hazardous atmosphere inside the wellsite trailer</p> <p>c. Exposure to hazardous gas – Carbon Monoxide gas overcame worker</p>

For Incident Report 6, it was found that the report served two functions: describing the incident and findings from the incident denoted by the functions *Description of Incident* and *Findings*.

Under the function *Description of Incident*, it was found that the employee suffered injuries after falling off the scaffolds. The function *Findings* showed results of the investigation of the incident which reflects human error.

Table 6 Functions of Incident Report 6

Report 6	
FUNCTIONS	CONTENTS
FUNCTION 1 <i>Description of Incident</i>	“A rigger working on the removal of column C206 on DF2 fell between scaffolding levels, a distance of approximately 2 metres. He fell through a gap in scaffolding where boards had been removed prematurely. The rigger sustained a suspected fracture to one of his vertebrae in his lower back.”
FUNCTION 2 <i>Findings</i>	“Premature removal of the scaffold boards is indicative of a weakness in the procedural and systemic elements of control of work process. This was exacerbated by the fact that the rigger had temporarily unclipped the lanyard to his harness so he could move to another position on the scaffold.”

Table 7 shows the functions of Incident Report 7. The report served two functions: *Description of Incident* and *Findings* happened?

The functions were consistent with all the functions found in all previous six reports whereby the incident were described what findings were generated from the investigation.

Table 7 Functions of Incident Report 7

Report 7	
FUNCTIONS	CONTENTS
Function 1 <i>Description of Incident</i>	“A contract crew was lowering a flowline riser segment using a nylon sling. While positioning the riser, the load was halted near the exhaust of a turbine generator. <i>The heat from the exhaust melted the nylon sling, causing the sling to fail</i> and the load to fall, injuring a workman.”
FUNCTION 2 <i>Findings</i>	<ol style="list-style-type: none"> a. <i>Lack or failure of supervision contributed to the accident.</i> b. <i>Crane operators failed to check the use of appropriate slings or rigging methodology</i> c. <i>The load was not centered prior to lift and the crane operator could not see the lift</i> d. <i>No pre-lift procedure was agreed upon by crane operator and riggers</i> e. <i>Employee was improperly positioned during operation, resulting in unnecessary risk and injury.</i>

Thus, it can be concluded that all the reports analyzed have common functions: to describe the incident, to describe cause the incident, to report the findings based on investigations held and to provide recommendations in order to prevent future incidents. They functions were consistent with those identified in other similar studies (Lam, 2013, Bhatia, 2010, Salo and Hanell, 2014)

In summary, Incident Reports 2, 4, and 6 served two interdiscursivity functions while Incident Reports 1, 3, 5 and 7 served three interdiscursivity functions as can be seen in Table 8 below.

Table 3 Summary of Functions of Incident Reports 1-7

Incident Report	Functions
1	<ul style="list-style-type: none"> • Description of Incident • Cause of Incident • Preventative Measures
2	<ul style="list-style-type: none"> • Description of Incident • Findings.
3	<ul style="list-style-type: none"> • Description of Incident • Findings • Recommendations
4	<ul style="list-style-type: none"> • Description of Incident and • Findings
5	<ul style="list-style-type: none"> • Description of Incident • Findings • Recommendations
6	<ul style="list-style-type: none"> • Description of Incident • Findings
7	<ul style="list-style-type: none"> • Description of Incident • Cause of Incident and • Preventative Measures

From the findings obtained, a few points will be discussed. Firstly, apart from the functions identified, the language features used to write the report is worth noting. Firstly, bullet points were used to highlight the causes of incident rather than in paragraph form. Secondly, it was found that terminologies/codes were also present such as “Level 1 Investigation” and “Man in the line of fire” in Report 1 to describe the employee involved in the incident and to describe different levels of investigation. Finally, some phrases were underlined as seen in Report 7 to provide emphasis about the incident.

Thus, the findings suggested that in preparing a professional genre, there were certain conventions and format to be followed. Also, the conventions reflected the norms of the organization which could be tied to the professional cultures and practices of the organization as presented by Bhatia (2010).

CONCLUSIONS

This study has shown that incident reports served four functions: to describe incident, to describe causes of incident, to report findings and to provide recommendations in order prevent future incident. They showed that there is a systematic process of reporting an incident which is a norm in the company.

One limitation of the study is that there could be more features of the language that could be identified if more reports were analyzed. Also, should data from the interview were analyzed, more insights into the incidents would be obtained.

As for pedagogical implications, it can be concluded that summary writing is one feature of a professional genre to be highlighted in ESP classrooms. Secondly, language features of summary writing could also be taught to learners. Also, conventions found in a report summary could also be pointed out to learners.

In relation to further studies, studies on other professional genres such as meetings could be conducted. One possible study with regard to meetings could be content analysis of minutes of meetings. Another study could address the process of conducting meetings and the language used in a meeting. Another genre, oral presentations, could also be studied in order to identify features of a presentation and the language used in presentations.

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