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A Genre Analysis Approach in Teaching Marine Electrical Engineers Texts

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Abstract: Genre analysis has become a prevalent approach in the linguistic analysis of various specialized genres. A concept of genre, emerging from literature, has received a broader dimension in the last decade, focusing on establishing recognized structures and language exponents of a specific genre in a particular discourse community. In addition, the expansion of ESP and the rise of subgenres in many rising professional vocations require users to have competence in the English language. In addition, language researchers need 'to dig into' the pragmatic context of genres. With this mind and resting on the concept of genre and discourse communities, the paper sheds light on how the genre analysis approach can be applied in teaching different marine electrical genres to students and future ETO officers. The marine electrical engineering discourse community is specific and relatively novel. In this paper, the focus is placed on seafarers, future electro-technical officers and the analysis of genres they utilize in their professional work on board ships. The results of the paper can be inspiring to ESP teachers involved in teaching specialized and technical genres.

Keywords: *ESP*; *genre*; *marine electrical engineering*; *discourse community*.

1. INTRODUCTION

Relying on Swales's theory of discourse and genres in discourse community [1], the marine electrical discourse community engineering can he considered as a novel discourse community in seafaring whose members use many specific genres aiming to achieve specific communicative goals in future Electro-Technical Officer's (ETO) tasks on board ship [2, 3]. The skills and competencies required by the Manila 2010 requirements of the SCTW convention for the ETO officer (Standards of Training, Certification Watchkeeping for Seafarers) are specified in section A-III/6 [4]. Undoubtedly, the education and training process for the marine electrical students, most likely, future ETO officers, requires a synergy of many factors. Since the establishment of the Marine Electrical Engineering Department at the Faculty of Maritime Studies Kotor, the subject teachers and language teachers have been faced with the task of designing language courses that will be in line with the competencies set out in the mentioned amendments on the one side and the related courses such as Model Course 7.08 Electro-Technical Officer [5] and required language competencies laid down in Model Course 3.17 Maritime English, on the other [6]. These are education, lifelong constant learning and integration of practical training, simulators and laboratory exercises, particularly regarding the primary duties of the ETO officer and the work with electrical systems and propulsion plant controls

[7]. Considering the above, the paper focuses on a genre analysis of a few documents obtained from the previous student of the Faculty of Maritime Studies Kotor, now sailing in the capacity of the Electro-Technical Officer on board foreign vessels. Although we have used a genre approach in the analysis of checklists of similar content, we may observe differences that vary not only in language, but also in aesthetic layout.

Given the above, the paper aims to establish peculiar features of genres used by ETO officers. The outputs are primarily pedagogical; that is, we tend to apply the obtained results in the classes aimed at learning authentic texts with the students of Marine Electrical Engineering. The patterns of schemata of a particular genre as a specific mechanism of communication [1] presented in this paper can be used as a valuable education tool in English for Specific Purposes classes (ESP). The first part of the paper provides a short review of the concept of genre and then, in the second part, we provide several examples of written genres used among ETO officers in their daily tasks on board ships.

2. A CONCEPT OF GENRE

The concept of genre in discourse studies has become popular with the rise of English for specific purposes (ESP), needs analysis, discourse analysis and genre analysis approach. According to Swales [1], humans strive to organize verbal behaviours through rules and repertories. The task of discourse or genre analysts is to establish those genres within a particular communicative setting. Later on, with the emergence of critical discourse studies, genre analysis is employed to reveal the relationship between the textual patterns and broader communicative settings. Wodak, Fairclough and Van Dijk state that there are inevitable interrelations between social practices and power in the constitution of the genre. More precisely, genres and discourse organization reflect the needs of a specific discourse community or community of practice membership [8].

The analysis of genre for the sake of application in the teaching of ESP and establishing generic conventions of a text under analysis has advantages in that it helps ESP teachers to identify communicative tasks that the learner needs concerning a specific text, the texts and tasks they need to handle. Based on target communicative goals, an ESP researcher has to dig into real-life communicative situations in which a particular genre is embedded [9]. Therefore, an examination of discourse practices allows for the clarification of language exponents regarding the context. Exploring this connection, often referred to as intertextuality, the researcher comes up with generic or recurrent patterns but simultaneously explores pragmatic or subject knowledge lying behind the text [10].

3. METHODOLOGY AND CORPUS

The paper reviews several selected genres used by ETO in daily chores on a ship. Apart from the operative work conducted on board, deck, engine and electro-technical officers are responsible to record activities in checklists to ensure that the tasks were conducted step-by-step and in a prescribed order [11]. Checklists can be classified as follows: 1. Narrative checklists 2. The tick-off type 3. Instruction type checklists [11].

The second type of written document used among ETO officers refers to operative procedures or instruction manual forms. The instruction manual explains how to handle equipment and which safety procedure to follow. Instruction manuals differ from company to company, depending on the ship and cargo type. Their layout and content also differ from department to department. Thus, instruction books or procedures used among deck or engineelectro/technical officer.

Criteria used to analyse in the analysis are types of genres (instruction book, checklist), type of discourse (narrative, argumentation, and factual discourse), and linguistic features. We relied on the assumption that the text itself guides the researchers.

In this paper, we utilized genre mapping to present how the surface structure of genre can be presented and specific patterns discerned [12]. There are many language programmes available to researchers nowadays, one of which is Textanz software. This programme allows mapping the text in terms of readability and density parameters, syntax structure, word length and word frequency [13]. It presents a type of linguistic 'identity card' of a text analyzed and serves the purpose of the analysis conducted in this paper.

4. SOME DOCUMENTS USED ON BOARD AND THEIR ANALYSIS

4.1. Checklists

Checklists, as said, may be of three types and their main communicative goal is to verify (in writing) and therefore guarantee (by signature) that a particular task was fulfilled. Furthermore, should any disputes or damages arise regarding the work done on board a ship, checklists can be used as proof that the person carried out the assigned tasks. However, we should keep in mind that the ships have been using more autonomous systems and that language requirements have been changing respectively. This means that checklists are stored in the ship's computer and are generated with one click on the computer mouse requiring a user to change only details relating to the ship's characteristics. However, this does not relieve ETO officers from the responsibility to keep records of activities, enter data into ship logs and complete checklists, especially when ship computers are inoperative due to a malfunction of the power supply on board. We must also note that some companies still keep records of documents using an indelible pen. Also, with some genres, such as the deck log book, all recorded entries must be legible; if some parts are erased, they must be visible.

In general, each checklist contains the company's logo, whereas the name of the checklist is typed in colour, visible font and placed either in the top canter or the top left corner of a document.

The content of the checklist refers to operational functions conducted by the ETO specified in the amended STCW convention. All competencies include an adequate level of English, especially regarding the use of internal communication systems, operation and maintenance of electrical and electronic equipment [14]. It must be mentioned that the rise of sophisticated installations on board ships and new technologies imposes new communicative requirements for the members of this community. Constant changes in the work environment also reflect on the emergence of the new and disappearance of the old genres. These changes are due to the globalization of shipping and the uniform nature of documents enabling seafarers to get familiar with the new forms in case they embark on a ship sailing under another flag. In addition, the unification of ships' documents saves time in case of international trials- ship forms and documents are used as valid evidence in court.

Each checklist or form has a title and number indicating that the company uses a quality management system. Mainly, the document has up to three pages and several segments. The first page contains general information such as the name of the ship and the name/surname of the person undertaking the work filling and therefore signing the checklist. As seen in Illustration 1, the High Voltage Permit to Work Checklist contains details about the type of work and person carrying out the work, a specific location on board the ship, the reason and the type of work done. Working with electrical energy, mainly with high voltage, requires compliance with safety procedures and thus must be evidenced in writing in a special HV Permit to work ship's form.

Permit Number	Ship Location	
hh:mm Start Time	hh:mm (max 24 hrs from start) Expiry Time	
Describe the scope of work and any associated instructions. List all equipment, drouits and systems covered under this work permit.		
Name, Rank		
Nama Danir		
	Permit Number hh:mm Start Time Describe the scope of work and an drouits and systems covered unde Name, Rank	

Illustration 1.Example of checklist High Voltage on board a ship

As seen from Illustration 1, the required information should be filled on the right side of the form which requires mainly factual information (the name and surname of the responsible person, work team details, position in the company). However, we noticed that a section titled Work Description requires a narrative or description of the scope of work undertaken regarding issuing a work permit.

Information in the last section of the checklist is of the tick-off type in which the authorized person

carrying out operations guarantees that the stated action was or was not fulfilled.

Work Completed 🗐 (HH:MM)	Work Canceled 🗐	Work Permit
Expired 🛱		
All tools and equipment were removed	and secured.	
Equipment and circuits re-energized an	d returned to normal status	
	a retained to normal status.	
	OR	
LO/TO to remain in place and entry ma systems/equipment/circuits that remain	OR de in ECR NAPA action log describin i solated and isolation measures th	g all at remain in effect.

Illustration 2. Example of checklist on board a ship. The tick-off type

Regarding the genre mapping, Table 1 contains information about the checklist explored. In addition to essential information presented in Table 1 obtained using the Textanz programme, such as the number of words and the longest word, the values showing readability and lexical density state that the text is readable and easy to comprehend.

The readability of texts varies according to genres and the audience to whom they are intended. Also, the readability parameters of literary texts differ from the parameters valid for technical genres. In general, as regards technical genres, many experts recommend that technical texts should be short and precise, avoid jargon, and utilize familiar words, simple sentences, active voice, preferably action verbs in imperative. Furthermore, the graphs should be easy to understand and visually as simple as possible with bullets or numbers, making the information in the text clear and accessible [15]. In addition, regarding the readability, physical factors such as layout, types of letters, diagrams, the size of the font, and the reader's knowledge about the text in guestion should be taken into account [16].

As regards lexical density, it presents a number of content (lexical) words divided by the total number of words. In technical texts, density has lower values making them easy to comprehend.

Table 1.	Genre	mapping	activity	-	The	High	Voltage
checklist							

Genre type	Checklist (Technical)		
Discourse type	Factual, narrative		
Number of words	185		
The longest word	Uninterrupted		
Readability	8.44 - average		
Density	0.38		
Sentences	Simple sentences, block language		
Communicative context	ETO doing electrical repairs		
Communicative goal	Evidence of activities done		

In order to provide further information about the text analysed, we added additional parameters to Table 1. For example, to motivate students to participate in the learning activities in the classroom actively, we may ask them to expand the information on the left side of the table (Table 1), which may be relevant for exploring the communicative situation in which a genre is embedded. For instance, they may add fields relating to the formality of genre or tone of communication (formal vs. informal), subject-specific specialized words, abbreviations or acronyms.

4.2. Instructions and procedures

The second genre analysed in the paper, the instruction manual, contains information on handling a particular device or part of the equipment. The first part of the instruction form contains general information about batteries and UPS, whereas the second part presents step-by-step guides about handling. One of the activities referring to vocabulary is to discern verbs as the most important content words for understanding the instruction form.

Verb	Frequency	Collocation
Open	175	Open swin 3, open battery, open swout switch 5
Close	91	Close the battery switch
Wait	52	Wait for 20 seconds; Wait for the ups to start up
Follow	49	Follow the switching order
Perform	30	Perform a battery test
Start (up)	27	Start up batteries
Ensure	20	Ensure the inverter is in normal operation

Table 2. Frequent verbs in the HV (high voltage checklist)

As seen in Table 2, the most frequent verbs are open, close, wait, follow and perform. We found 104 examples of the noun start-up, derived from the verb start-up, meaning setting up, putting into operation or motion [17].

As for genre mapping, we established the following information after analysing instruction forms

providing information about battery operation. Compared to Table 1, we chose other parameters on the left side, such as verbs, lexis and aesthetic layout. In doing this, we intend to show that the genre dictates which information can be presented and explored. The teacher may decide which fields to add or erase during the class activities with students.

Fable 3. Genre mapping	activity –	An instruction	manual
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Genre type	Procedure or guideline
Discourse type	Injunctive, procedural
Syntax	Instruction mode/ Imperative
Verbs	Action verbs
Aesthetic layout	Diagrams and bullet lists, pictures
Lexis	General and subject-specific (electrics and electronics)

The type of discourse prevalent in the procedures or instructions is injunctive discourse. The communicative function of the injunctive discourse is to inform the users about the components of the assembly and proper handling. Its primary communicative purpose is to oblige the user to obey the rules required by the procedure. Some recommendations regarding this kind of text are avoidance of wordiness or too technical words, avoidance of idioms and phrasal words and modals as they may undermine the mandatory nature of a specific action. Also, gender-neutral forms (he/she or s/he), abbreviations and instructions should be liaht avoided, too [18]. In of these recommendations, we noticed that instructions make use of imperative forms (Example 1), whereas personal pronouns are avoided.

Example 1: The use of imperative form in the instruction forms

START-UP

Close the following switches in the order below: 1. CB993 EMSWBD

- 2. *Press* SWIN input switch
- 3. *Press* SWOUT output switch
- 4. Wait for 20 seconds

We also established many subject-specific acronyms which required correspondence and the help of our former Marine Electrical Engineering students. These are SWIN (switch + in) SWOUT (switch+out), SWBM (manual by-pass switch), SWLA (line change-over switch). Notably, there is the intensive use of prepositions in the Instruction forms used by Electro-Technical officers. In addition, we found 111 instances of the preposition *out*, 111 examples with *off* whereas the preposition *on* was established in 110 examples. This is because "how-to" instructions in electrical and engineering forms describe the condition and operation of the equipment (*on*, *off*, *out* of function). In addition, prepositions facilitate nonnative speakers of English and speakers with paper

operation of the equipment (*on*, *off*, *out* of function). In addition, prepositions facilitate nonnative speakers of English and speakers with poor English language competence on board ships to comprehend at least basic operative instructions regarding setting up, maintaining and closing the appliance. Concerning the instruction manuals, prepositions are sometimes vital for understanding the meaning, especially for the members of this professional community with expertise in subjectspecific lexis [1]. We noted that prepositions are written in capital letters.

Example 2: The use of prepositions in the instruction forms

1. Change-over to By-pass - no interruption.

2. LED IN- flashing OFF when no voltage is present.

3. The line IN LED and the line OUT should illuminate steady green.

4. The LED will turn OFF completely.

Regarding the subject-specific lexis in the instruction forms, our search yielded the most frequent content words in descending order: switch (295), LED (253), line (180), battery (181), load (116), emergency (86), operation (76), capacitors (82), inverter (70) and voltage (70). By processing texts in an adequate language software available online can be a convenient tool for designing specialized lists of words and glossaries in the ESP classroom. In addition, regarding the diversity of materials available for collecting digital corpora owing to globalization and digitalization of shipping, the students and seafarers may participate in creating authentic corpora which can be the subject of linguistic research.

5. CONCLUSION

In recent years, the interaction between subject teachers and professionals has resulted in many benefits in designing ESP courses and teaching specialized genres [19]. Leaning on theories set forward by Swales [1] and Bhatia [9], we considered the concept of specific written genres in the case of the ETO discourse community and presented genres used among ETO officers on board a ship.

Genre mapping activities presented in this paper may show how genre activities may be applied to depict or define authentic genres used in the ETO discourse communities. We intended to show that using linguistic tools such as language programmes available online, we may obtain essential surface data about the required texts and later dig into a deeper analysis. In this way, the analysis is grounded in a particular context, communication rules and expertise of different communities of practice are exhibited [20]. The tables provided in the paper may be expanded as the parameters are not fixed (communicative setting, genre, discourse). This means that, depending on disciplinary specificities, this approach allows creativity and better involvement of students in the teaching process. Students are more likely to participate in the classes and learn patterns or genres used in real-life situations on a ship. Nevertheless, optimal results are obtained when former students, present seafarers sailing in the capacity of ETO, are involved in the teaching process. For instance, they may deliver authentic materials and help in the interpretation of the linguistic data.

We believe that the conclusions presented in this paper will help other researchers, especially those involved in teaching technical genres of a particular professional discourse community, to explore textual or verbal patterns that the specific users utilize to obtain specific communicative goals.

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