Genre Analysis in Technical Communication

—MARÍA JOSÉ LUZÓN

Abstract—An increasing body of research relies on genre to analyze academic and professional communication and to describe how members of a community use language. The purpose of this paper is to provide a review of genre-based research in technical communication and to describe the different approaches to genre and to genre teaching. While some research focuses on the textual analysis of genres, other studies focus on the analysis of the social context and the ideology and structure of the discourse community that owns the genre, and on the role of genres as social rhetorical actions of the community. These two perspectives are also reflected in the teaching of genre in technical communication.

Index Terms—Genre analysis, genre teaching, social context, technical communication, textual analysis.

The first studies of scientific and technical English viewed it as a register, as a type of discourse, with the texts representing it sharing common features (e.g., [1], [2]). The studies’ objective was to define the specific characteristics of this type of discourse, without paying attention to variation in the use of these features depending on the genre. In the early 1990s, some researchers began to analyze scientific and technical English with a different approach, looking at how different genres make use of specific combinations of linguistic features and how the meaning and function of these features may change in different genres [3], [4]. The features and conventions of the genre are explained in relation to its communicative purpose, which is determined by the social context in which the genre is produced. Genre analysis has evolved to include not only the study of specific linguistic features but also the analysis of the social context, the culture, the ideology and organization of the discourse community, and the practices of this community (see [5]).

The purpose of this paper is to report how genre analysis has been (and is) applied to the study of technical communication and to provide a review of research that shows the relevance of the concept of genre for technical practice. The paper will explore how genre analysis provides a framework for investigating and understanding technical communication issues.

After defining the concept of genre, the paper presents two lines of research: studies that analyze the textual features of genres and studies that focus on the social context or discourse community. This description is followed by discussion of the usefulness of the concept of genre in teaching technical communication. The paper concludes with some implications both for understanding and teaching technical communication.

CONCEPT OF GENRE

Flowerdew and Peacock distinguish two approaches in genre analysis: studies that focus on the textual analysis of genres and studies that start from the analysis of the social context or discourse community [6]. These two approaches to genre have been related to different schools of genre-based research [7]–[9].

The traditional text-based approach to genre in technical communication developed from the rhetorical approach to the study of scientific and technical discourse. The focus of research is the interaction of communicative purpose, rhetorical structure, and linguistic choice. The texts belonging to a genre are seen as sharing some communicative purpose, textual features, and content. Although it is assumed that social context has a critical importance in shaping the features of a genre, social context is not in fact explored when analyzing a specific genre. Most English for Specific Purposes (ESP) studies of genre adopt this perspective. A genre is seen as a class of communicative events that share common purposes that are recognized by the members of the discourse community that owns it. These purposes determine the structure and linguistic choices in the genre. Similarly, genre researchers of the Sydney school are mainly interested in the relation between context, communicative purpose, form, and function, and they concentrate on the analysis of textual features [10], [11]. In both cases (the ESP approach and the Sydney school), genre research starts from the view of genres as relatively stable forms, and its purposes are educational: It is used to guide the teaching of generic form and features, and thus, to help students become members of a specific discourse community by using the genres of that community.

A more recent approach adopts a social perspective, drawing on Bakhtin’s theory of speech genres [12].
and on Miller’s view of genre as a typified social action in response to rhetorical situations [13]. Miller argues that successful communication is only possible if participants share socially created rhetorical situations [13]. That is, it is the recurrent social actions of the writers who produce the genre that give rise to the genre regularities. Thus, in order to analyze genres, it is necessary to study how people interact with texts within specific activity systems [14]. This approach is followed by the North American school, which focuses on the close relationship between a discourse community, the genres it uses, and the rules that govern these genres. In this approach, genres are relatively unstable, or “stabilized-for-now,” rhetorical forms that must be studied in their context of use and in relation to the goals that they are used to accomplish in a specific discourse community [15].

Drawing on Miller’s view, the researchers who adopt a social perspective define genre not only in terms of regularities in textual features but also in terms of regularities in the rhetorical actions that determine the composing practices [16]–[18]. With this view in mind, Paré and Smart define genre as a distinctive profile of regularities across four dimensions: (1) a set of texts that share formal aspects (e.g., document structure, style, linguistic features); (2) the composing processes involved in creating these texts (activities such as gathering, analyzing and evaluating information, as well as writing and editing); (3) the reading practices used to interpret the texts (e.g., the ways a reader approaches a text, negotiates meaning in the text, constructs knowledge, and uses this knowledge); and (4) the social roles performed by writers and readers [16]. These roles determine the actions that can and cannot be performed by particular individuals.

Berkenkotter and Huckin also see genre as a socially situated phenomenon related to the rhetorical actions of a community, but they emphasize the dynamic nature of genres [18]. They characterize genres as “inherently dynamic rhetorical structures that can be manipulated according to the conditions of use” [18, p. 3]. Berkenkotter and Huckin list five main aspects of the modern genre concept.

1. Dynamism: Drawing on the work of Miller, Berkenkotter and Huckin define genres as “dynamic rhetorical forms that are developed from actors’ responses to recurrent situations and that serve to stabilize experience and give it coherence and meaning” [18, p. 4]. Genres are not fixed structures, but change over time to respond to their users’ communicative needs.

2. Situatedness: The genres we use depend on the actions we need to accomplish with them. That is, “our knowledge of genres is derived from and embedded in our participation in the communicative activities of daily and professional life” [18, p. 4]. Thus, the repertoire of genres used by a community is related to the community’s activity system.

3. Form and content: Knowing a genre means not only being aware of its form and textual features but also being aware of when the genre can be used, in which situation, for which purpose, and which content is appropriate.

4. Duality of structure: Genres are a response to the rhetorical situations that arise in the interactions between the members of a community. In this way, they help not only to reproduce and perpetuate social structures but also to construct these structures.

5. Community ownership: The genres used by a discourse community reflect its norms, epistemology, ideology, and social ontology. Discourse communities use genres with specific features or personalized forms of communication. This means that insiders (members of the community) have an effective form of communication, and outsiders find it difficult to understand the actions performed with the genre.

RESEARCH FOCUSING ON THE TEXTUAL ANALYSIS OF GENRES IN TECHNICAL COMMUNICATION

Many genre-based studies have focused on the textual analysis of a corpus of texts considered to be representative of a specific genre. These studies have analyzed genre structure (i.e., the different rhetorical moves that conform to the genre), lexicogrammatical features (e.g., tenses used in a specific genre and the function of these tenses in the genre, the use of nominalization, the type of vocabulary), or textualization (i.e., the conventional use of specific linguistic features in certain genres).

One of the most influential researchers on genre analysis has been John Swales, who, with his analysis of the rhetorical structure of the introductions of research articles, established a method for the analysis of the rhetorical structure of different genres. Swales identified three moves, or rhetorical categories, in research article introductions: establishing a territory (move 1), establishing a niche (move 2), and filling the niche (move 3) [3]. The research article has been the genre to which most attention has been paid in scientific and technical communication. Using Swales’ model, several studies have analyzed the schematic organization of research papers in engineering [19]–[23]. These studies have contributed to revealing that genres vary depending on the discipline. Anthony showed that article introductions in software engineering included some moves not present in Swales’ model [21]. With these additional moves, introductions included an evaluation of the research in terms of application or novelty of the results. Moves 1 and 2 also tended to be longer than
usual, with detailed background information and the inclusion of definitions and examples. According to Anthony, this difference may reflect the fact that papers in software engineering have a broad audience, including readers from other branches of engineering.

The organization of information has also been the main topic of research in the study of other technical genres. Bartholomew described the organizing structure of technical reports in engineering [24]. McKenna analyzed how information is organized, in terms of theme-rheme, in technical writing by engineers [25]. Using a Hallidayan framework, he showed how engineers use language to convert real world entities and processes into nonreal world concepts. Selim detected the communicative purpose, structure, and delivery of oral presentations in engineering [26]. Klein and McKenna used a genre-based approach to define the features of policy and procedure documents and work instructions [27]. Farkas analyzed rhetorical construction in procedural texts [28]. He claims that, since one of the goals of technical communication is to support user performance, it is necessary to explore alternatives that are more flexible than the “streamlined-step” model. Mulcahy also considers addressing the needs of the reader as the main criterion in the writing of instructions [29]. In her study of instructions in the field of computing, she analyzed several types of strategies that are characteristic of coherent task instructions (e.g., choosing a consistent text paradigm, using sentence chains, creating causal networks). Because these studies reveal the strategies followed by writers of effective technical documents, they can be of great help to practitioners.

Features of genres that are the object of much recent research are genre mixing and the fuzzy boundaries between genres [30], [31]. Connor and Mauranen analyzed characteristic features of research grant proposals written by Finnish-led teams [32]. The ten moves that recur in these proposals reveal that this genre shares features both with academic research papers and with promotional genres. Similarly, in her study of reports for decision making, Rude pointed out that this genre shares some common ground with the proposal, the report of scientific experiment, and the persuasive essay [33]. The similarities between different genres might be explained with the concept of GENRE COLONY proposed by Bhatia [34]. A genre colony is formed by a set of genres that share a general communicative purpose. An example would be promotional texts. While individual genres are “more typically and narrowly grounded in socio-rhetorical contexts,” genre colonies are “rather loosely grounded in broad theoretical contexts and are identified on the basis of flexible and fluid overlapping of generic boundaries” [34, p. 282].

The main purpose of most studies based on the textual analysis of genres is to provide models for teaching. These studies analyze a certain kind of document with a view to developing guidelines on its composition and on teaching its structure and linguistic features. Awareness of the rhetorical structure of a genre and of the meaning of specific linguistic features in the genre can help writers to produce a text and readers to understand it. Some research has shown the usefulness of this type of study for practitioners. For instance, Selzer shows how a proposal writer used previously written examples to determine the content and structure of subsequent proposals [35]. And Miller states that the eight points that, according to the Council of Environmental Quality, should be included in environmental impact statements are taken as an outline of this type of documents [36]. These points are, therefore, a generic topic, used to determine the adequacy of impact statements.

GENRE RESEARCH FROM A SOCIAL PERSPECTIVE

Another line of research within genre analysis has also been fruitful: studies that approach genres of technical and scientific communication from a social constructionist perspective. There is increasing interest in analyzing the concept of a discourse community and in studying both how the ideology of the communities that own the genres is reflected in the rhetorical construction of these genres and how genres help to construct social structures. Professional documents are seen not as neutral and objective writing but as social constructs [37]–[43]. This line of research is in agreement with the definition of technical writing provided by Dobrin [44]. He considers that research on technical writing should not focus simply on identifying the specific formats and linguistic features that characterize the “objective style” of technical writing, but rather should start from the idea that technical writing is “writing that accommodates technology to the user” [44, p. 54]. Thus, research should focus on “the practices of groups the writer is writing to, writing for and writing from, as well as in the practices of groups” to which the writer belongs [44, p. 58].

In this section, I will first examine genre within the framework of activity theory. I will then discuss studies that, starting from the assumption that texts are used to perform rhetorical actions within specific activity systems, show that genres both reflect and shape the ideology and social structure of the community that owns them.

Genre and Activity Theory Activity theory provides a framework for studying genres in relation to the activities of the community that owns them. Texts are seen not as independent objects but as objects
that are determined by the activities that they serve. Genres are studied as objects that mediate socially organized activities [45]. They are tools to carry out community activities and to negotiate meaning within the community. Thus, when studying the different forms of communication of a community, researchers need to analyze them in relation to the community’s recurrent activities, its organization, and its members’ shared knowledge. When studying genre from this perspective, the concept of “community of practice” [46] can be more useful than that of “discourse community.” A community of practice is a group of people who work and participate in social (professional) activities together, thus developing a shared knowledge.

The idea that the discourse practices of a community are one of its distinctive features has led researchers to focus on the genres used by the community. Several frameworks have been used to describe groups of genres that work together in a community or organization: genre sets [47], genre systems [48], [49], genre repertoires [50], and genre ecologies [51], [52]. (For a detailed description of these four frameworks and the differences between them, see [53].) All of these frameworks, in which the genres used by a community are presented as interacting with each other, have been used to examine the relation between the networks of interaction and the activity system of a community.

Orlikowski and Yates define a GENRE REPERTOIRE as “the set of genres enacted by groups, organizations or communities to accomplish their work,” and they further note that “a genre repertoire serves as a powerful social template for shaping how, why and with what effect members of a community interact to get their work done” [50, p. 1]. Knowing the genre repertoire of a community involves being aware of the community members’ shared norms and expectations about communication and of the social context from which these norms and expectations derive. Thus, familiarity with the repertoire of genres of a community is necessary for an individual to engage in social activity, and developing such familiarity is, therefore, part of becoming a member of a community. However, as Orr points out, few studies have examined the genre repertoires (or, as Orr calls it, “the entire generic landscape”) of professional communities [54]. Therefore, in order to understand professional communication, researchers should analyze the different writing activities of different communities, meaning that they should relate these activities to the nature of their work, examine the context within which these writing activities are situated, and explore relations between the different genres.

Following this line, Orr has identified the repertoire of genres used in the field of computing [54]. From electronic surveys and personal interviews with computing professionals, he established a taxonomy of about 90 genres, which he then classified into five groups according to their primary goals: generation, procuration, dissemination, evaluation, and regulation. The primary goal of genres in the generation category is to help to generate new ideas, information, or products (e.g., memos, records, laboratory reports); genres in the procurement category have as their main goal to obtain information, resources, approval, etc. (e.g., email letters, grant applications); the goal of genres in the dissemination category is disseminating information, instructions, or opinions (e.g., papers, book chapters, manuals); evaluation genres are designed to evaluate (e.g., equipment reviews, feasibility reports); and regulation genres are designed to regulate professional activities within the community (e.g., contracts, guidelines).

To understand the communicative practices of a community, it is necessary not only to identify the repertoire of genres used by that community but also to examine how genres work together to mediate social activities. For this purpose, a new framework to describe sets of genres has been developed: GENRE ECOLOGIES [52], [55], [56]. The distinctive features of this framework are that it focuses on dynamism and adaptability and on compound mediation (i.e., the way a genre is coordinated with the whole ecology of genres of a community to mediate an activity). Spinuzzi claims that “the success of any given genre depends on its interconnections with other genres and how those genres jointly mediate a given activity” [53]. Genre ecologies are dynamic: new genres are imported or discarded, genres evolve and get mixed, and these changes tend to change the entire activity [56]. But, in spite of such dynamism, ecologies are also characterized by their relative stability: connections between the genres of an ecology are relatively stable.

Since ecologies are dynamic, another aspect worth researching is how the evolution of a community and the social changes in the community affect the evolution of genres and genre ecologies, which develop to meet the new communicative needs of the community. Yates states that “new communications genres develop as a product of organizational needs and available technologies” [57, p. xvii]. She points out that the features of form and style of circular letters, reports, and manuals, for instance, were determined by the demands of their production and use. Zachry examined the development of communicative practices, working with a national production company that used texts to mediate its organizational activities across geographically dispersed locations. He concluded that there is a need to investigate the relation between texts in the organizations where professionals do their work [58].
The Interaction Between Genre and the Social and Organizational Context

Much current research on technical communication explores different aspects of the relation between genre, community, and social structure. There is a reciprocal relationship between writing and the social and organizational context where this writing takes place. When writing an instance of a genre, technical writers are influenced by the ideology and the social and organizational structure of the community. But their rhetorical activity, the genres they write, also influences the structure of the community.

Genre research relies on the assumption that genres reflect the norms, epistemology, and ideology of the community that owns them [18]. Several studies have explored how writing is influenced by context. These studies emphasize the idea that because the meaning expressed in a document depends on context, in order to interpret a text, it is necessary to fully understand the social context in which it is used (e.g., [59], [60]). In their study of the topics of argument in engineering reports, Miller and Selzer state that “discourse in particular communities is shaped by the generic, institutional and disciplinary conventions of that community” [59, p. 336]. That is, the arguments constructed by the members of an institution or organization are influenced by generic considerations, by institutional or organizational considerations, and also by the concepts, methods, and assumptions of the discipline. Driskill uses several examples, among them the space shuttle Challenger disaster, to show how context and corporate culture affect the production and interpretation of texts in organizations [60]. As she puts it, context is necessary to explain “the types of meanings writers attempt to express, and readers expect to interpret” [60, p. 125]. The need to interpret genres in relation to a social context is also emphasized by Beaufort, who shows how a single genre may vary in form and function depending on the specific discourse communities in which it is used [43]. The genres used by a community have layered meanings, which are related to other communicative activities.

But just as the concepts of discourse community and community of practice are complex, so is the relation between community and genre. A number of studies have analyzed the structure of communities and its effect on the genres they use. A community may consist of different subgroups with their own distinctive communicative practices. Brown and Herndl show that the linguistic behavior of professionals in large organizations is in part determined by their group affiliation [61]. They found that technical people preferred certain linguistic structures in their writing, structures that were used less often in the managers’ writing. Winsor has widely researched the issue of the communicative practices of different subgroups within a community. For her paper “Rhetorical practices in technical work,” she studied the writing of three engineers working at a large agricultural company and concluded that the writing they do for peers, who understand what they do, is very different from the writing they do for their managers or for mechanics [62]. In later papers, Winsor explores the role of genres (specifically the work order genre) in the communication between subgroups within an organization who belong to different activity systems and have different goals [63], [64]. In this type of communication, texts both facilitate joint work between the different groups, by bridging the gap between them, and, at the same time, contribute to maintaining existing structures of power and territory.

Genres not only reflect and feel the effects of social structures; they also affect and shape the social structure of the community or organization that uses them. Some researchers have explored the ways that writing influences social and organizational environments [65]–[67]. For instance, Doheny-Farina showed how a text can define and maintain a company or organization [67]. He showed how Microware’s business plan actually created the company: The plan established the parameters of the company and, thus, persuaded key individuals to take actions that made the company a reality. From this, Doheny-Farina concludes that the relationship between writing and the development of an organization is reciprocal. Similarly, Rude analyzed two reports on energy policy by the Union of Concerned Scientists, concluding that they are strategic tools that present rhetorical arguments whose aim is to influence future action [68].

The role of technical writing practice in knowledge construction and in legitimating some types of knowledge, while excluding or rejecting other possible types of knowledge, has also been the object of recent research. Longo claims that, in order to reveal how knowledge is constructed and legitimated, it is necessary to analyze writing practices by placing them in relation to influences outside the organization in which they occur (e.g., economic, political, or social pressures), not restricting the analysis to the influences within the organization [69]. According to Longo, the question to ask is, “why the text includes the information that it does and not other information that would be equally possible to include—why the text legitimates some kinds of knowledge and not others” [69, p. 55]. Winsor analyzed the construction of knowledge in relation to the space shuttle Challenger disaster, and argues that knowledge does not exist apart from social forces, so we cannot just “pass on” information [70]. She maintains that while “it is a commonplace maxim that knowledge is power, it is also true that power is knowledge in the sense that people with power decide what counts as knowledge” [70, p. 16].
The analysis of how genres are influenced by factors within and outside a community or organization is of great importance for practitioners, since it can help to identify the cause of communication problems. Herndl, Fennell, and Miller put forward the idea that the different discourses of the different social subgroups within an organization may be a cause of miscommunication [65]. Starting from the idea that meaning is constructed by both writers and readers, who rely on a "collective set of standards for using language that is established and maintained by a self-conscious community," Herndl, Fennell, and Miller explore communication failures in the accident at Three Mile Island and the shuttle Challenger disaster, and conclude that they were in part caused by the different discourse practices of socially distinct groups [65, p. 283]. That is, these groups did not share the knowledge that they needed to interpret discourse as it was intended. Longo points to a further cause of the Challenger disaster. She claims that it was not only a result of miscommunication between different social subgroups and a lack of quality of the technical texts, but also the result of the influence of economic and political considerations on writing practices [69]. This influence contributed to legitimating some knowledge (the manager’s decision to launch) over other knowledge (the engineers’ warning not to launch).

Communication problems can also be caused by cultural conflicts, as shown by Artemeva [71]. She reveals how the periodic engineering report can become a source of conflict when North American engineers collaborate with colleagues abroad. Specifically, she found that differences in tone and reader expectations yielded misunderstandings. Similarly, Thatcher analyzed problems in professional communication among U.S. and South American personnel in one multinational organization, finding that U.S. and South American personnel’s views of professional communication differed [72]. For instance, while U.S. personnel regarded writing to be an appropriate mechanism for regulating behavior, the mechanism preferred by South American personnel was personal interactions. Such cultural differences should be taken into account when analyzing the role of writing in the construction and regulation of organizational behavior.

**Genre Teaching for Technical Communication**

Many papers have explored how the concept of genre can be used in the teaching of technical communication, as a tool to help students become members of a community. Here we can also distinguish two approaches related to the different approaches to genre analysis: teaching genres explicitly and focusing on the linguistic features of the genre (e.g., lexico-grammatical features, rhetorical structure), or placing the students within the social context and making them face the rhetorical situations to which the genres respond.

**Teaching the Linguistic Features of the Genre**

Some papers describe different methods and classroom practices for teaching a specific genre. These papers start from the need to provide students with a model for writing and, thus, present genre as a relatively stable form. The teaching of genres as part of classroom practice is influenced by the approach to genre of the Sydney school. The pedagogy proposed by this school involves teaching genres explicitly by following three steps: (1) modeling, in which students are exposed to texts that exemplify the main features of the genre (from social context to lexicogrammatical features); (2) joint negotiation, in which the students, with the guidance of the teacher, create an example of the genre; and (3) independent construction, in which students write a draft of their own text [73], [74]. The explicit teaching of genres is also the prevalent practice in English for Specific Purposes. The ESP genre-based approach is related to the concept of task. Students need to carry out tasks that allow them to focus attention on rhetorical action and on the organizational and linguistic means of its accomplishment [3]. Swales and Lindemann show how to teach students to write the literature review for a research paper by making them engage in activities to help them build awareness of the genre [75].

Papers concerned with the teaching of textual features of technical genres have been published by Weinstein [76], Kotecha, [77], Marshall [78], Walker [79], and Flowerdew [80] for technical reports, and by Kennedy [81], Whalen [82], and Butler [83] for technical proposals. Flowerdew, for example, proposes that the organizational structure of academic reports can be taught by using a genre-based framework [80]. She finds that the problem–solution pattern is frequently used to organize key sections of undergraduate engineering progress reports. Drury [84] and Walker [79] also defend the importance of teaching students the specific form and content of engineering laboratory reports. Drury proposes the teaching of laboratory report writing skills by using activities that help students become aware of the purpose of the genre, its content, its structure, and its language [84]. These activities involve students in identifying criteria for a successful report, assessing examples of report writing by using these criteria, writing parts of a practice report, and reflecting on the feedback provided by peers and teachers. Walker describes how genre theory was integrated with writing instruction in an engineering department [79]. Writing consultants, who had been trained in the discourse practices of engineering, helped students learn the process of writing engineering laboratory reports and then taught them strategies to meet the writing needs of their discipline.
Teaching Genre From a Social Perspective  Other researchers on technical communication propose the incorporation of social constructionist genre theory in the teaching of technical writing (e.g., [40], [41], [85], [86]). They contend that to write appropriate texts within a discourse community, it is necessary to be aware of the needs of the audience and to understand the social context in which the genre is produced. Defenders of this perspective suggest that it is not enough to learn just the textual regularities of a genre. Students should learn that these regularities are determined by “the actions that are being performed through the texts, in response to recurring socio-cultural contexts” [85, p. 195].

In her paper “A humanistic rationale for technical writing,” Miller states that rather than considering the teaching of technical writing as the teaching of a set of skills, it should be seen as a “kind of enculturation” that helps students understand how to belong to a community [87, p. 617]. To master the genres used by a community, students must first become acculturated to the community and understand the community’s ideology and values. When students enter the workplace, they have to face communicative situations and challenges that were not considered in technical communication courses, and they have to learn new genres and new ways to learn and use these genres [40].

In the enculturation model, genres are not learned through explicit teaching. Instead, students learn the discourse practices of the discipline by participating in the activities of the community and acquiring conceptual knowledge [18]. Anson and Forsberg studied the transitions of six university seniors from academic to professional discourse communities and observed that “the writer must first become a ‘reader’ of a context before he or she can be ‘literate’ within it” [88, p. 225]. Thus, it is necessary to teach technical communication not only from a textual or “composing process” orientation but also by incorporating concepts of initiation and considering writing as cultural adaptation. This model emphasizes the importance of positioning the texts in their social contexts, in relation with other texts used in the discipline.

This model of learning genres is based on the view of genres as dynamic social actions and on the perception of genre knowledge as “situated cognition,” that is, as the capacity to engage in the social activities of the community and negotiate meaning [18, p. 4]. A number of proposals for teaching genres rely on this view. Kryder proposes the teaching of those genres that have been identified as important after consultation with the engineering community [89]. She considers that genres are flexible models and, thus, should not be presented as products; instead, the document formats used by the engineering community should be presented as “customs within the workplace that might change with the situation when practiced within a particular company or for a particular customer” [89, p. 5].

Sheehan and Flood also adhere to the view that, in order to master the use of a particular genre, it is necessary to be aware of the social activities of the community that uses the genre [90]. Genres are “frames for social actions,” and thus, contribute to the creation of knowledge in professional communities [91, p. 19]. Starting from this idea, Sheehan and Flood suggest the need for using the “open case method” for the teaching of genres. In an open case, engineering students use the analytical report to analyze technical aspects in the workplace where they are situated: the university campus. Artemeva et al. also defend the usefulness of a pedagogical approach grounded in both North American theories of genre and theories of situated learning to design discipline-specific communication courses [86]. To design these courses, three conditions should be met: (1) assignments should be related to subject matter courses, in order to help students acquire the genres of their discipline; (2) a dialogic environment, in which students can negotiate meaning, should be created; (3) assignments should allow students to build on their learning experience in the course.

One of the most promising approaches to teaching professional genres within the enculturation model is classroom–workplace collaboration (e.g., [92]–[94]). Winsor investigated how exposing four engineering undergraduates to engineering practices and common engineering genres affected their writing. Through their participation in a cooperative education program, students developed awareness of the audience and of the genres used by the community [92]. Wojahn et al. describe a technical communication program that focuses on the challenges faced by students in a multidisciplinary client-based experience [93]. Blakeslee explored how classroom–workplace collaboration helps to teach professional genres [94]. Through this collaboration, which replicates workplace activity, students become familiar with features of workplace genres.

All of these studies show the benefits of designing technical communication courses grounded in discipline-specific contexts, in which students can acquire rhetorical skills and strategies that will allow them to face communicative situations that may take place in the workplace. These studies can help teachers of technical communication by showing...
them how to help students acquire these skills: incorporating typified writing practices in situated contexts of the discipline, having students interact with experienced writers and with real audiences, and proposing activities in which students need to interact with existing texts and deal with topics of real importance in the workplace.

**CONCLUSIONS**

This paper has reviewed the current trends in the analysis of genres in technical communication. Some research focuses on the description of the textual forms and linguistic features of specific genres. A different line of research focuses on the study of the social practices of the discourse community that owns the genres. These are not opposing lines, but complementary, along both of which much research remains to be done. Genre-based technical communication courses rely on one (or both) of these perspectives of genre.

Genre theory provides a means for practitioners to learn specific characteristics about writing within a discipline and to be aware of the linguistic and rhetorical skills necessary to communicate successfully in the discipline. The studies that analyze genre within the framework of activity theory have shown the need for familiarity with the genres used by a community in order to become a member of the community and engage in social activity. Genres are tools that members of a community use to share information, mediate social activities, and respond to the communicative needs of the community.

This paper has shown that genre researchers can improve understanding of technical communication practice by analyzing the organizational and social context in which writing takes place, by studying genres in relation to the activity system of a community, and by exploring the linguistic and rhetorical features of the repertoire of genres used by the community. It is necessary to examine the different writing activities of a community within the context in which the activities are situated, and to explore the relation between these activities. Thus, genre is a useful analytical category for researchers of technical communication.

Genre-based research also has implications for the teaching of technical communication. Current research has shown that although it is useful to help students become aware of the textual regularities of a genre, this is not enough. Since these textual regularities are determined by the social actions that are performed through language in response to recurring rhetorical situations, it is necessary in teaching to emphasize the social context of workplace documents. Thus, assignments in technical communication courses should ask students to use language in real rhetorical situations related to their discipline. This way, they will be able to acquire the rhetorical skills and genres used in the discipline. Genre theory is, therefore, highly significant for technical communication teachers, because by using genre-based pedagogy in their classes, they can empower their students to succeed as members of a community of practice. Another pedagogical implication of current genre theory is the need to teach the genres of a discourse community as dynamic rhetorical forms that can be manipulated to respond to new rhetorical situations. Again, this can be achieved only if the features of the genre are presented as a response to a specific situation or context.

To conclude this paper, I will suggest some areas for further genre-related research. One issue, on which some interesting research is already being carried out, is the intertextual relations between genres. Genres may belong to a specific colony of genres, sharing a general communicative purpose, which leads to their sharing of some textual features. But there is also an intertextual relation between genres that belong to the same genre set, to the same genre system, or to the repertoire of genres or the genre ecology used by a community. The genres used by a community work together to perform and mediate the social activities of the community and to respond to the different rhetorical situations that the members of the community may face. Hence, in order to understand the communicative practices of a community, it is necessary to examine how the different genres it uses interrelate. It would also be interesting to examine the relation between the textual features of the different genres used in a community or organization and the social structure of the community.

As a result of the use of the internet as a distribution medium for technical documents, another promising area for research is the analysis of online technical documents and their relation with the features and structure of the virtual communities that use them. Practitioners would benefit from research that examines the differences between print texts and electronic texts, that examines the readers' interactions with electronic texts, and that analyzes how the capabilities of the internet can help to improve technical documents and facilitate technical communication.

Genre analysis has great relevance for researchers in technical communication, for practitioners, and for instructors, because, by analyzing texts in relation to the communities that produce them and the social activities of these communities, it provides the appropriate framework for researching and understanding technical communication issues. As this paper has shown, much research remains to be done using this framework.
REFERENCES


Maria José Luzón is a Senior Lecturer in English for Specific Purposes at the University of Zaragoza, Spain. She has a Ph.D. in English Philology and has published papers on academic and professional discourse and on language teaching and learning in the field of English for Specific Purposes in national and international journals.