Multidisciplinary
SCIENTIFIC JOURNAL
OF MARITIME RESEARCH

University of Rijeka
FACULTY OF MARITIME STUDIES

Multidisciplinarni
znanstveni časopis
POMORSTVO

https://doi.org/10.31217/p.34.2.2

Learning technical genres – a blended learning approach

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ABSTRACT

Research studies dedicated to the application of blended learning in modern linguistics are on the rise. With the interdisciplinary nature of science and curricula, researchers are combining traditional methods with contemporary digital sources and text processing tools. Regardless of the many methods and approaches recommended, there is no set methodology widely proven to be successful, due to different student profiles, language competences and the learning environment. This paper presents the results of the blended learning approach taken at the University of Montenegro's Faculty of Maritime Studies in Kotor. The traditional teaching approach has been combined with genre and discourse knowledge, with the support of digital and internet tools. The goal of the research is to demonstrate that students of the English for Specific Purposes (ESP) course may benefit from genre- and linguistics-based knowledge applied in the technical and digital environment. Moreover, it is argued that a corpus- and genre-based approach to teaching professional genres provides an opportunity to enrich ESP classes. This approach has primarily proved to be beneficial in teaching technical and engineering genres. Language precision is the essence of effective language competence.

ARTICLE INFO

Preliminary communication
Received 2 April 2020
Accepted 24 August 2020

Key words:
Blended learning
Specialised discourse
Discourse and genre theory
ESP

1 Introduction

Technical solutions and internet technology have become widely promoted and used in modern classrooms. Modern teachers are expected to incorporate technical knowledge into the teaching process, to use video material and online resources, and to support distance learning. In general, a series of new practices – such as flipped classrooms and blended learning – involve increased interaction between teachers and students. These novelties have become a must of modern curricula in higher education institutions [13], [14], [27]. The flipped classroom and blended learning approach provide students the opportunity to obtain course materials from the comfort of their homes and to choose to work at their own pace [15], [24]. It must be noted that the term "blended", used in this paper, depicts a mixed approach that combines traditional and modern technology-oriented learning.

The mixture of blended and traditional learning in the contemporary English language classroom has increased in use with the growth of technical support in educational institutions. With the introduction of virtual platforms, Moodle and other wireless computer rooms have become an appealing learning environment. This new synergy of traditional teaching and communication technologies has been elaborated in many research articles. Oproiu (2014) encouraged teaching with e-learning [22], while Rymanova, Baryshnikov and Grishaeva (2015) examined the interrelations between the old and new digital worlds [25]. Costello, Johnston and Wade (2019) carried out research about the effect of the internet environment on learning [8], while Garrison and Vaughan (2013) presented case studies about blended learning practices in an institutional setting [13]. Of relevance to this paper is the study presented by Meishar-Tal and Shonfeld (2018), who compare paperless classrooms with those that utilise traditional handouts and books [20]. Hwang et al. (2015) evaluated the idea of replacing in-class teaching with at-home studying [18]. The perspectives of blended learning have become a focus of attention of many academics [16],

[19]. The blended learning environment has grown in popularity in higher education institutions since the end of the 1990s. Blended learning has brought many benefits, such as increased interaction among students, autonomous learning, increased flexibility of teaching practices and higher grades or students [27]. It is particularly applicable in educational institutions of a specialised provenance, since the practical demonstration of the authentic language can be supported by the use of simulators, specialised software, and audio and video materials.

The introduction of the internet and technological devices into the classroom has produced remarkable results in the analysis of specialist and vocational discourses. The needs analysis within studies of English for Specific Purposes (ESP), genre analysis, discourse analysis and corpus linguistics have opened up new approaches in the analysis of the linguistic features of professional genres.

At the same time, the rise of teaching platforms for ESP in electronic format and the popularity of web-based quizzes, and multimedia materials has facilitated the connection between theoretical and real-world knowledge. In addition, the results obtained by the application of text processing software in text analyses have been a significant input for identifying conventional discourse patterns in texts [26]. These results have been used to create tailor-made specialised courses and to produce technical glossaries. For example, it is assumed that technical words make up 70% of technical vocabularies and have exceptional pedagogical implications [23].

Besides this, language teachers have started on the one hand to collaborate with subject teachers or professionals in the field, and on the other to apply the latest linguistic and educational knowledge. What is more, language teachers must also have good computer skills, an available Wi-Fi-enabled classroom and the help of knowledgeable computer personnel.

In regards to the syllabus of the students of technical departments whose language skills and preferences are the subject of exploration in this paper, it is worth noting that, according to the International Maritime Organization's STCW Convention, practical work makes up about 20–25% of the teaching process. According to the mentioned convention, seafarers must have an adequate level of English language competence and must be able to communicate at an operative and leadership level. So, in learning language, students – future seafarers – must know different genres in real-life situations onshore and onboard ships.

The genre approach to teaching maritime genres is nothing new. It has been applied by many researchers identifying the peculiar discourse features of many written and verbal maritime genres [6], [10]. Moreover, according to Morgan and Alfehaid (2019), different courses lay down different criteria, and the approaches have to justify the input, depending on the learners' pragmatic needs [21].

In view of the above concepts in teaching, this paper aims to explore the effectiveness of the blended approach in the English language classroom for students from technical departments, with the following research questions in focus:

1. What are the benefits of blended learning in teaching specialised genres in English? Does it present an exciting challenge to learn the specifics of different technical styles?
2. What effect does introducing blended learning have on the final achievements of students, compared to traditional methods?

The application of genre analysis, along with the use of web-based teaching, and language software in an online educational environment cannot be separated from the language needs of the students.

2 From a needs analysis to a genre-based approach – a literature review

Needs analysis in the course design process is the basis of English for Special Purposes (ESP) courses [1], [2]. Needs analysis is a forerunner of modern applied linguistics focused on the study of the target communicative situation of a specific linguistic community. The subsequent phase in linguistic research texts was a systematic analysis of different genres. According to Frow (2006), a genre, in its linguistic interpretation, is taken as a recurrent or typical structure of information formed and shaped by the situation [12]. This patterning of conventional data in language material was first applied in the analysis of written genres (academic, legal, commercial, economic and academic). Later, the analysis was extensively applied in the study of spoken discourses (court proceedings, political speeches in parliament, patient–doctor interviews, radio and television shows, airplane cockpit transcripts, and ship and plane VHF transcripts).

Genre theory emerged from the traditional classification of literal genres rooted in classical Greek genres. In modern linguistics, the focus is on the intertextual level or relationship between a genre and its user, or how a recurrent discourse pattern reflects the context [9]. More sophisticated analyses of various empirical corpora in interdisciplinary settings were supported by linguistic theories and the rise of genre analysis, laid down by Bhatia [4], [5] and Swales [30], discourse analysis, conversation analysis [17] and critical discourse analysis [31], [11].

As regards technical genres, it is of importance to understand how they reflect a specific discourse community and which competences "beyond the text" are required in that particular domain. Thus, researchers and practitioners of ESP may plan and design language activities according to the context and aim of the course [32].

Quantitative results obtained by the use of computational software in the analysis of genres must be interpreted in a particular learning context. According to Bateman,

"This is one of the primary motivations for applying a more differentiating view of genre and its realization—i.e., accepting that texts, and particularly multimodal texts, may exhibit a range of distinct styles across the structural elements that they involve" [3].

3 Method

This study presents the empirical results of the introduction of blended learning into the English language course at the Faculty of Maritime Studies in Kotor during the 15 weeks of the winter semester in the 2018/19 academic year. The study involved second-year students from the three study programmes: Nautical Studies, Engineering, and Marine Electrotechnics. This made up a sample of 100 students from 18 to 22 years old (89 males and 11 females).

The students had an intermediate level of English proficiency, and they enrolled in the regular course of English language, titled Maritime English.

We intentionally chose second-year students as they already had some experience of university, had worked with the Moodle platform, and had passed the basic subjects in navigation, engineering and electronics. Moreover, during their first year of study, students are already using the Moodle platform extensively and relying on the use of professional software in learning practical subjects. Given this fact, we found that more versatile materials and language activities could be developed with these students.

A summary of the procedure of the research process is as follows:

1. In order to gain an insight into the students' preferences related to traditional and blended methods, a pre-course questionnaire was administered to the students. This was a useful guide to evaluate students' preferences about language activities, web-based platforms and the choice of learning material. Students were asked to evaluate language activities (vocabulary list, frequency, collocations, metaphors, idioms, phrases, translation, and abbreviations) with a mark from 1 to 5, the results of which are presented in Figure 3.

2. In order to generate linguistic data aimed at implementing genre-related activities such as genre mapping, we used the text analysis software Textanz [33]. This program enables researchers to generate word frequency, collocations and phrases about a particular genre. It is simple to use and is suitable for analysing large portions of text. The program also calculates lexical density. The lower the density of the text, the higher the understanding will be. Text understanding is particularly important in becoming familiar with technical genres. For instance, the average lexical density of the Standard Marine Communication Phrases (SMCP) in the Textanz software (Figure 1) is 0.08, while their readability is 2.21. These figures indicate that the SMCP text is readable and easily comprehended.

3. Using texts that are part of the standard syllabus for students, such as the SMCP, technical manuals, and engineering reports, students were introduced to new linguistic concepts through a series of genre-based activities, such as genre mapping. In the course of our work, we included subject teachers and their feedback.

4. Bearing in mind the fact that students should not be burdened with in-depth linguistic knowledge about gen-

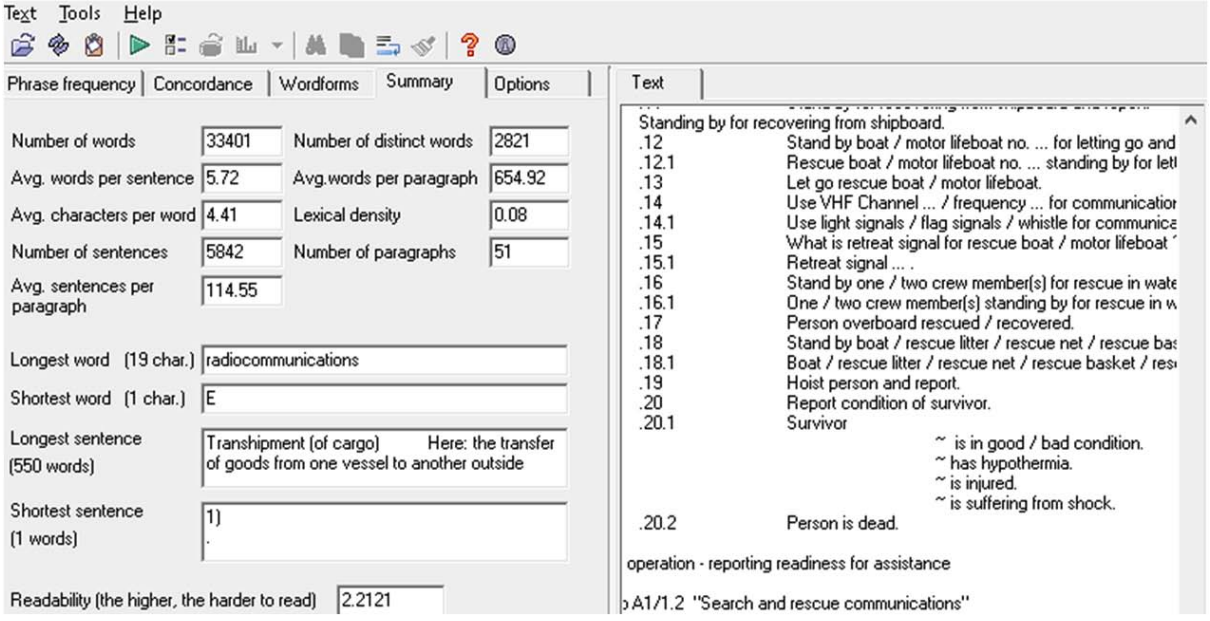


Figure 1 Data about the SMCP text [28] using the Textanz programme

Source: Author

res, as English is not their native language and the focus is on professional rather than general English, we focused on teaching basic knowledge about genre, discourse and types of sentences. While doing this, we encouraged students to bring or find texts that were related to subjects of a professional content (navigation, ship engines, ship knowledge, and basics of marine electrotechnics). These introductory linguistics lectures included face-to-face teaching, and all the learning material was posted on the widely used Moodle platform.

5. In order to compare the benefits of blended learning with traditional learning, the students did a series of Moodle-based progress tests throughout the semester, including the final test. The tests contained evaluation feedback, transparent scores, and a self-check option. At the end of the semester, a post-course questionnaire was administered to the students to assess the blended learning concept of learning.

6. In regard to the learning material, we used traditional books as part of the regular syllabus (compiling texts for students, PowerPoint presentations, the SMCP, internet resources for the electrical and engineering manuals, e-books on marine electrical knowledge, and e-learning platforms such as the MarEng platform. We also made use of the faculty's simulators and the learning materials provided by Seagull, Videotel and Marlins.

4 The present study

Regarding the theoretical foundations, the research in this paper draws on the genre theory laid down by Swales [30] and Bhatia [4], [5], which deals with the identification of recognisable patterns or text schemata in the target texts. The development of each novelty nowadays requires the support of technology and available multimedia classrooms. There is no special-purpose classroom or language laboratory at the Faculty of Maritime Studies in Kotor designed for English language, which was a significant drawback. However, English language classes are carried out twice a week in a computer centre with a central computer, a smartboard, and 35 computers for students. The preconditions for the use of the Moodle platform were: the registration of an authorised person (teaching staff), a personal account for each student, and the running of the technical equipment. All language exercises and assignments were posted on the Moodle platform.

In this research, we tried to assess the students' preferences, their responses to the blended learning concept, and apply the benefits of a genre-based approach in a digital and technical learning environment. We applied traditional face-to-face interaction with students, enhanced interaction with students during classes, and provided feedback via the online Moodle platform for individual assignments. Direct communication was particularly relevant in the pre-course phase of teaching when students were familiarised with the Textanz programme, the concept of genre mapping, and the basis of linguistic concepts. We supported students' active participation in the course and asked them to contribute with their collections of specialised texts, which were later analysed either during classes or as a part of their homework assignments.

For the faculty, the introduction of blended learning was a challenging undertaking, as the previous generations of students had got used to learning from books and by the book. This meant that English language teachers mainly emphasised the importance of grammar and a list of specific specialist vocabulary. The students had not yet encountered the concept of blended learning in English. Also, the teachers had not applied linguistic analysis tools when teaching. However, since the curricula was updated, new project activities and changes in the faculty's overall technical, logistical, and educational policies were introduced, synergy between various domains has been inevitable, and the latest trends in teaching started with implementation. Teachers became aware that the internet, Moodle, and other virtual environments were not fully present in the teaching process – these virtual platforms were underexplored and reserved either for practical exercises or final exams.

The idea of blended learning, applied in our research, placed emphasis on interdependence between the com-

Table 1 Language activities and teaching sources according to language level

Language level	Activities	Teaching source
Pragmatics	Context understanding, idioms, metaphors Repetition, redundancy	Video material Audio material Software
Syntax	Sentence word order Sentence structure Type of discourse	Language programme (Textanz)
Semantics	Glossaries Establishing noun phrases, clusters, binomials, abbreviations	Language programme (Textanz)
Phonology	Recognising differences between phonemes	Audio material (MarEng Learning Tool, Marlins test)

Source: Author

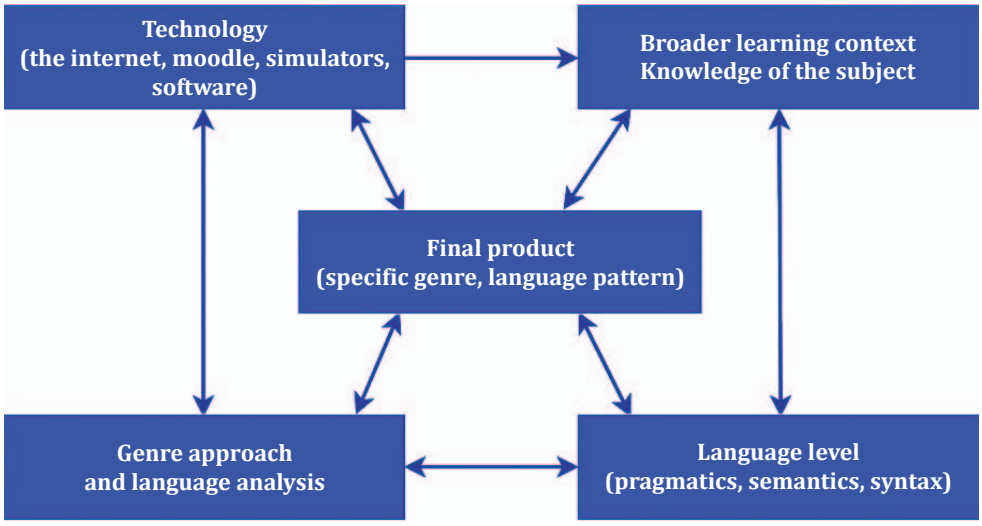


Figure 2 The interrelation of components in the blended learning model

Source: Author

ponents. Technical support was a precondition for the education process in terms of the smooth running of the electronic platforms (the internet, Moodle, simulators and textual software).

It must be noted that we were well aware of the fact that there were no predefined, step-by-step procedures on how to implement the blended concept. We tried to pre-plan teaching activities and had in mind the students' knowledge of other subjects as well, thus taking into account the broader context or knowledge of the subject (Figure 2).

As mentioned, we aimed to link the language activities with the language level being explored and with a relevant teaching source of learning (Table 1). For example, phonology-related exercises relied on audio material, and the emphasis was on the pronunciation of the specific phonemes (e.g. the difference between the phonemes in *p*ort and *s*ort, *q*uay or *k*ey). With syntax rules, the focus was on identifying sentence structure, length and word order.

Before introducing the genre-based approach, the students were asked to complete the pre-course questionnaire about their preferred language activities in English classes (Figure 3). For example, they were asked to choose between vocabulary exercises, abbreviations and more context-dependent language skills.

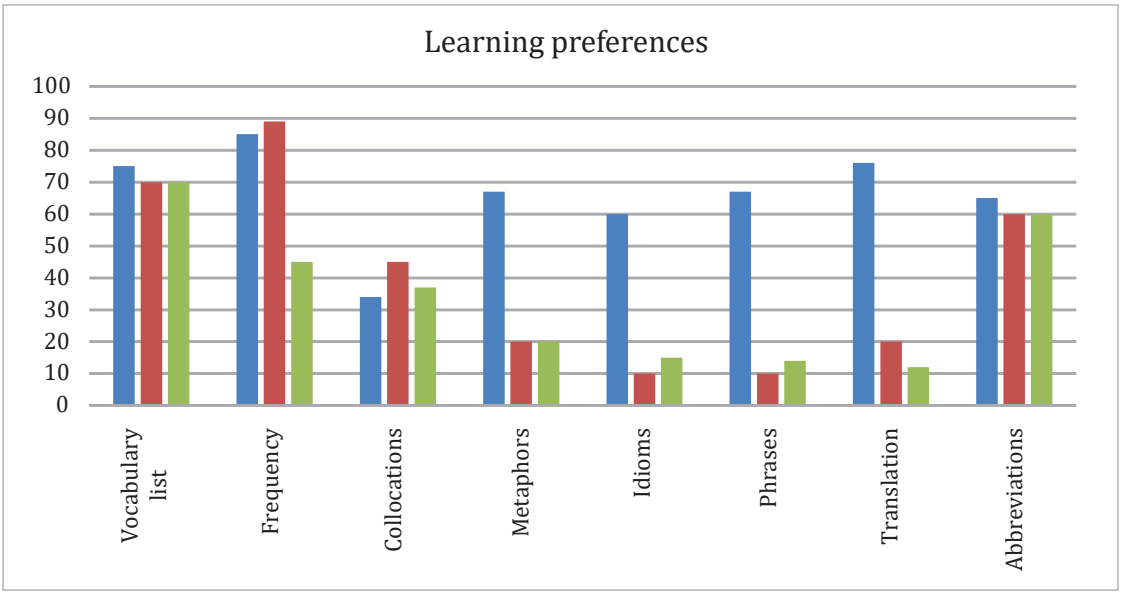


Figure 3 Pre-course questionnaire: students' preferences related to language exercises

Source: Author

5 Genre mapping activity – the example of the SMCP

At our mention of a blended learning approach in the English course, our impression was that the students were bewildered as to whether they would be able to familiarise themselves with this new teaching practice. We were aware of the constraints that a combination of traditional learning, web-based tools, linguistic knowledge and the application of text software might bring to technically oriented students. For this reason, the first classes focused on traditional face-to-face lessons with a lot of preparatory lecturing and instruction. The students were introduced to the following genres: regulations; manuals; reports; instructions; and letters, and to the following discourse types: narrative; regulative; descriptive; technical; and legislative. With our guidance they revised basic sentence structure (simple and complex clauses), types of clauses and word order.

After familiarisation with the programme, and after gaining an insight into the students' preferred language activities (Figure 3), the next step was to focus on the selection and implementation of the language activities.

In order to facilitate students' familiarisation with different text types and textual organisation, we introduced a specific activity labelled as "genre mapping" (Table 2). It must be mentioned, that all the data obtained by the "genre mapping" activity was discussed and explained within a specific maritime context.

The students were asked to fill in Table 2 and identify the features of the genre in question.

Using the Textanz programme, the analysis of the SMCP text showed that the average lexical density of the Standard Marine Communication Phrases Text (SMCP) is 0.08, while the readability is 2.21. These figures show that the text is both readable and understandable. Students were asked to make conclusions about why the SMCP should be readable. We found that discussion about the elicited language facts expanded their existing knowledge about real-world language use and spurred the students to active participation in the classroom. Some answers to the given question were: "The SMCP must be clear; otherwise a misunderstanding may occur"; "We (future seafarers) must use clear and short sentences"; and "Nobody is expecting you to tell a story, but to be brief".

Table 2 Genre mapping activities – the SMCP

Genre type	Regulation
Discourse type	Normative
Number of words	33,401
The longest word	"Radiocommunications"
Readability	2.21 – good
Sentences	Simple clauses
Syntax	Predictable Subject–verb–object
Semantics	– Specialised words – Phrasal verbs
Pragmatics	– Repetitive discourse – Clear communication

Source: Author

In the next step, the students were asked to identify the syntactic structure and conventional discourse patterns, such as repetition.

To illustrate the repetitive discourse activity, one of the assignments given to students was to identify the number of SMCP sentences using the "what is…?" pattern in interrogative sentences. Using the Textanz programme, 65 sentences were generated.

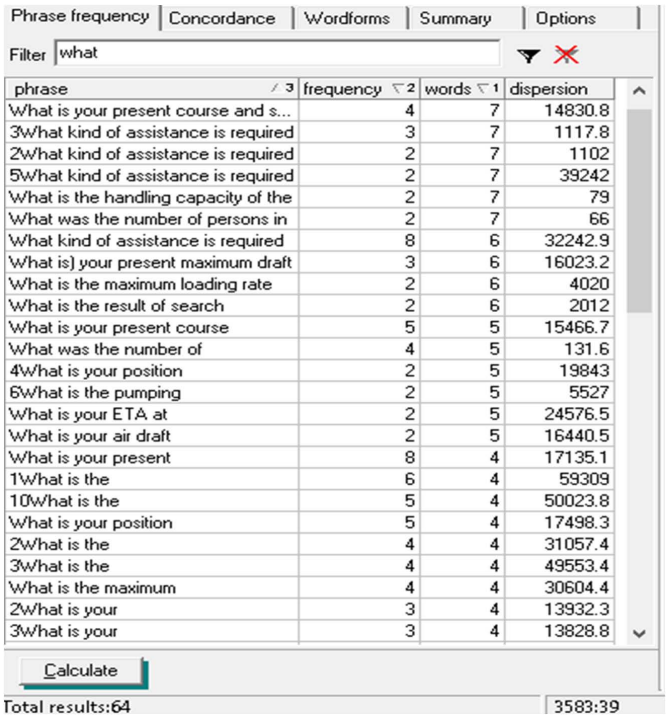
After highlighting the "what is…?" pattern in the SMCP (Figure 4), the students were asked to participate in a discussion of why repetitive discourse is used in the SMCP, and what the use of such sentences infers about SMCP communication. In this way, by answering questions that were posed to them, the students were continuously encouraged to link language facts to real language use. While doing this, students were continually supported by the teacher's immediate feedback.

Some of the answers to the previous questions were: "A repetitive pattern enables production of as many questions using the subject–verb–object pattern"; "The SMCP sentences are simple and seafarers prefer memorisable sentences"; "Someone with poor English knowledge can learn this system easily and say as many sentences following the subject–verb–object pattern"; and "Patterns are just fine".

With the teacher's help and relying on the students' knowledge gained during the first-year studies in nautical subjects, students came to the conclusion that seafarers are fond of textual schemes in acquiring a repertoire of specific genres [10].

Therefore, students learned to perceive "the underlying competency" [1], or how a repetitive or redundant discourse interrelates with the specific maritime setting in which the SMCP phrases are used. The examples of the above sentences were found on the MarEng platform, and students were asked to listen to audio lecture material related to that part of the SMCP.

A further step in the genre mapping activity was focused on the level of semantics. Given that verbs are bearers of meaning in the SMCP, the goal was to establish the frequency of the most deployed verbs in the texts. Concordance enables one to find out useful linguistic outputs and to explain the use of the lexical item in context. Students were asked to find examples of the concordance (Figure 5) of the most common verbs in the SMCP (verbs such as *make*, *keep*, *take*, *have*, *check* and *get*), and record many different examples of the use of these verbs. Given that some of the verbs are phrasal, students discussed their meaning in the maritime context ("to get underway", "to keep clear").



phrase	frequency	words	dispersion
What is your present course and s...	4	7	14830.8
3What kind of assistance is required	3	7	1117.8
2What kind of assistance is required	2	7	1102
5What kind of assistance is required	2	7	39242
What is the handling capacity of the	2	7	79
What was the number of persons in	2	7	66
What kind of assistance is required	8	6	32242.9
What is) your present maximum draft	3	6	16023.2
What is the maximum loading rate	2	6	4020
What is the result of search	2	6	2012
What is your present course	5	5	15466.7
What was the number of	4	5	131.6
4What is your position	2	5	19843
6What is the pumping	2	5	5527
What is your ETA at	2	5	24576.5
What is your air draft	2	5	16440.5
What is your present	8	4	17135.1
1What is the	6	4	59309
10What is the	5	4	50023.8
What is your position	5	4	17498.3
2What is the	4	4	31057.4
3What is the	4	4	49553.4
What is the maximum	4	4	30604.4
2What is your	3	4	13932.3
3What is your	3	4	13828.8

Figure 4 Textual patterning in Textanz

Source: Author

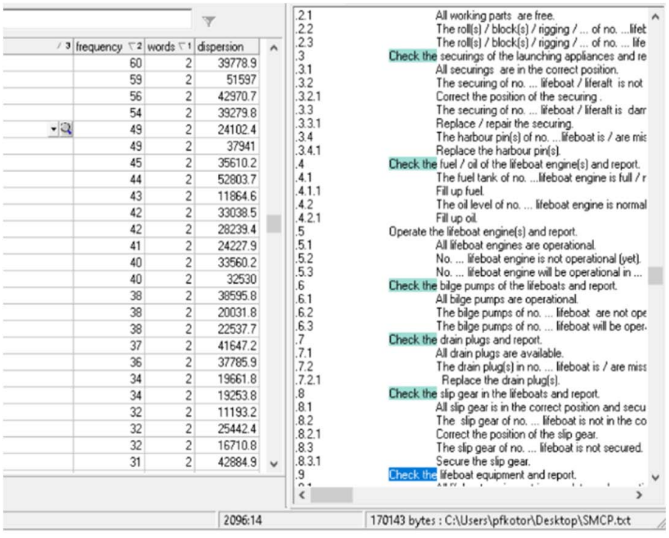


Figure 5 Concordance lines for the verb *check*

Source: Author

As already mentioned, all the determined language facts were reflected upon by the students and supported by the teacher's meaningful feedback. During classes, we imposed discussion activities and student–student interaction on the subject of genre varieties and discourse types. We also applied Eric Mazur's peer instruction method [29] in order to trigger communicative interaction in English on the examined topic. According to this model, the teacher shows a multiple-choice question on the classroom projector, and students choose the correct answer. Whenever the cumulative answer was not satisfactory, the students worked in pairs or groups and searched for the best answer.

5.1 Genre-mapping activity – manuals

The following genre-mapping activities were carried out with second-year students of the Department of Marine Engineering and Marine Electrotechnics (Table 3). The selected genres were two types of manuals (engine assembly and wall plug manual). The first was part of a regular syllabus for English for marine engineering students. The latter was a part of the English language syllabus for the marine electrotechnics students.

Regarding the results of the pre-course questionnaire presented in Figure 3, the students of marine engineering and marine electrotechnics showed interest in the content-specific vocabulary, especially the manuals, instruction books, and simulators they use in regular practical classes. Relying on this information in designing the course for this group of students, one of the activities was to create a vocabulary list and assign as many words as possible to the selected semantic field (Table 4). After the students were given a specific text, they were asked to differentiate between various lexical groupings and categorise semantic clusters (such as: semantic field current, tools, equipment and marine engines).

This activity also required the teacher's participation in the students' work and constant monitoring activities. According to Chung and Nation (2004), students should know the text they are processing, as technical vocabulary is related to the specialist domain and is part of a system of subject knowledge [7].

Furthermore, the pre-course questionnaire results (Figure 3) indicated that students of marine engineering and electrotechnics are fond of abbreviations. This was expected, since abbreviations are conventional language signals of technical genres that these students frequently encounter. In light of this, one of the homework assignments given to the students was to collect as many specific, related words and abbreviations during their regular classes in specialised subjects, which are held in the faculty's simulators (a high-voltage simulator and a Transas diesel engine tanker simulator). This collaboration with the subject-specific teachers and the exchange of information was motivating to students as they felt that they were contributing to the English course with new content-specific information gained from professional subjects. Moreover, this approach encouraged subject teachers to transfer their subject-content knowledge in English, which was not the case in regular teaching. This cooperation produced inventive results in terms of sharing knowledge and experience, and we decided to post glossaries related to content areas on the Moodle platform. The list also included standardised and non-standardised abbreviations. This approach confirmed that, in blended activities, the teacher

Table 3 Genre-mapping activity – manuals

Genre type	Manual	Manual
Discourse type	Technical, factual	Technical, narrative
Number of words	256	432
The longest word	"Specifications"	"Semiconductivity"
Readability	1.34 – good	2.23 – good
Sentence structure	– simple clauses – noun phrases	– simple clauses – nouns
Semantics	– specialised vocabulary – abbreviations	– specialised vocabulary – abbreviations

Source: Author

Table 4 The semantic field for the word "current"

Semantic field	Vocabulary list
"Current"	flow, increase, decrease, conductor, semiconductor, circuit, voltage, resistance, AC, DC, wire, coil, isolator, signal, amplifier, amplitude, fluctuation

Source: Author

plans the course objectives and decides which language skills and competencies students should work on [2].

5.2 Evaluation and final achievements

In order to evaluate the results of blended learning teaching, the students were given a series of Moodle tests during the semester. Apart from the regular activities included in the course syllabus, such as grammar, the tests also included the genre-mapping activity presented above. One of the benefits of the tests was that the students were given feedback about the results after the time predicted for the test had expired. This meant that the tests were programmed in such a way that the students received a final score and feedback upon finishing the test.

Figure 6 presents a screenshot of the question for nautical students related to genre mapping. The mark "✖" means that the question has been answered incorrectly, and feedback is presented in the red field below the question.

In another example (Figure 7), the test was programmed in such a way that the students had to read the feedback in order to check whether their answers were correct or not. This was done to make sure that students had read the provided feedback, and checked and identified errors.

Compared to the final cumulative success of the students from the previous semester of their studies, in which students had a pass rate of up to 70%, the pass rate of the students with whom we deployed blended learning rose by 10 percentage points. This can be attributed to the fact that

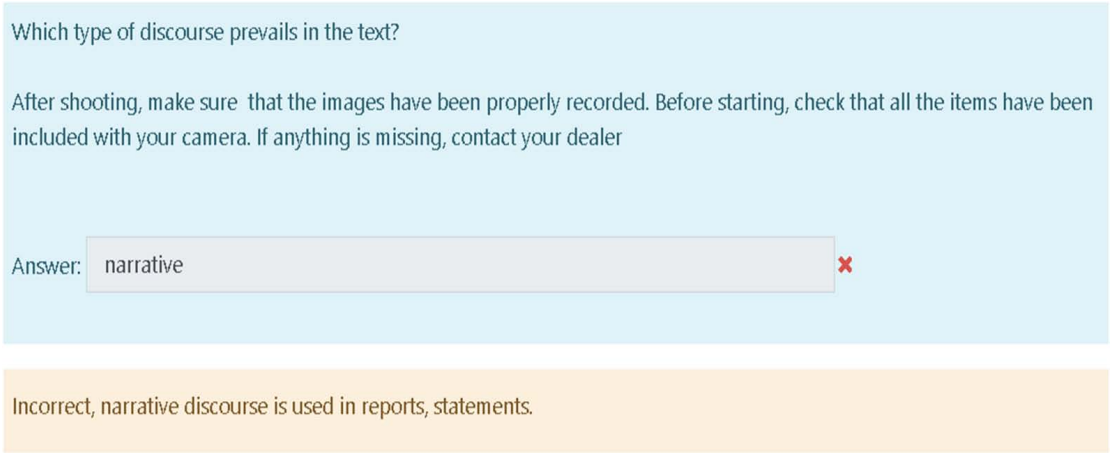


Figure 6 Screenshot of the correct answer with feedback in the Moodle progress test

Source: Author

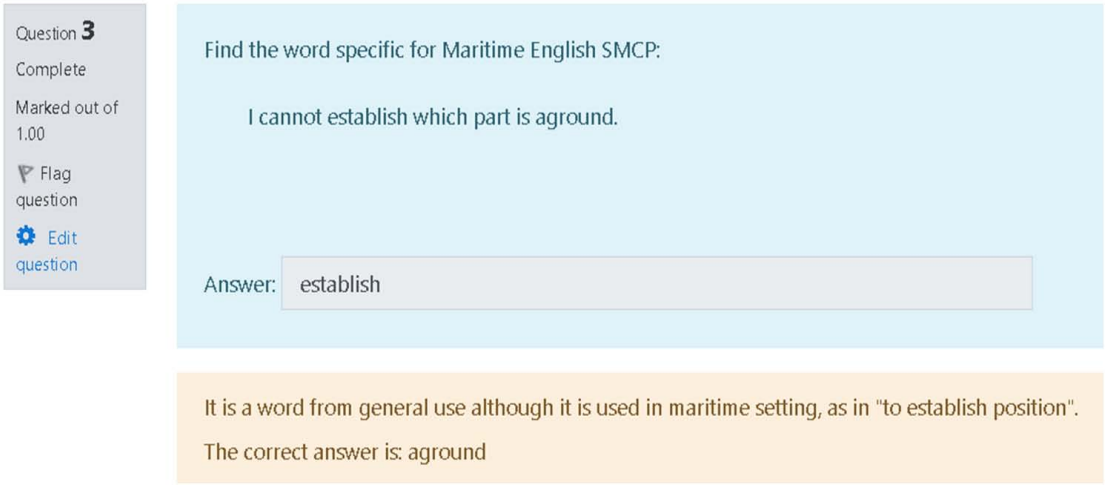


Figure 7 Screenshot of feedback in the Moodle progress test

Source: Author

Table 5 Results of students' evaluation

	Pass score	Participation in the course	Student satisfaction with the course (1–5)
Winter semester 2017/18 Traditional teaching	70%	75%	4.2
Winter semester 2018/19 Blended teaching	80%	80%	4.6

Source: Author

students were given five successive Moodle tests, whereas in traditional teaching they had up to two written tests and an oral exam. Furthermore, the participation of students in the course rose by 5 percentage points (Table 5). When compared with data from the previous winter semester, the increased participation in the course can be explained by the fact that students, who previously had not attended classes due to working or being on board ships, were able to attend the course via the Moodle platform.

At the end of the semester, the students were asked to fill in the second questionnaire (the post-course questionnaire) that requested their qualitative feedback in the form of comments about the blended-learning approach. The questionnaire contained one question: "Please rate the blended-learning approach that we used this semester from 1 to 5. Please feel free to give any comments." In regards to the results from one to five, the students' average evaluation mark was 4.6 (Table 5) which yielded higher results compared to the previous winter semester, which had an evaluation of 4.1.

6 Conclusion

The empirical research presented in this paper relates to the introduction of a blended-learning approach for second-year students in three technical departments at the Faculty of Maritime Studies in Kotor, for a duration of one semester of study.

The introduction of the blended approach included a combination of traditional face-to-face learning, lecturing and interaction with students. This was particularly important for the initial phases of the course, when the students were introduced to the basic concepts of genre, linguistic terms and the textual programme.

In order to get a better understanding of the students' preferences for language activities, the students were administered a pre-course questionnaire, on the basis of which we were later able to design tasks and activities, all along complying with the regular curriculum of the study programmes.

Following the questionnaire outputs, and in order to have the students understand the differences between genres and discourse types, we generated a genre-mapping activity as a convenient model for genre description. The description of genres also included information about the language level under scrutiny. All the activities were supported by students' active discussion about the elicited language facts and by the teacher's feedback. All the language material and assignments were posted on the Moodle platform.

The inclusion of subject-specialist teachers, particularly of teaching personnel involved in carrying out practical exercises at the simulators had a twofold effect. On the one hand, the students were motivated to elicit answers from their subject teachers regarding English terms for the content they were learning in their professional subjects. On the other hand, the subject teachers were enthusiastic about the benefits of integrating English into their subject courses and of contributing towards creating a Moodle database of specialised vocabulary.

For practical reasons, placing the learning material on the Moodle platform turned out to be beneficial for those students who did not attend the classes due to work, or for those seafarers aboard vessels who were following the course and who took the progressive tests.

According to the post-course questionnaire indicators, the students' participation in the course and their overall assessment outputs rose slightly compared to the previous semester of study. This progress, in part, can be attributed to the series of tests that were given to students throughout the semester (in comparison to traditional marking with two written tests and oral examination). The greater engagement of students can be explained by taking into account the fact that all the material notifications about the course tests were available online.

However, we believe that the blended learning approach requires significant preparation by the teacher and collaboration with other colleagues and information technology personnel. The final results will depend on the teacher's ability to rely on his/her intuition, knowledge and reliable sources of information (such as pre-course questionnaires and tests). The students easily got used to the new learning environment and learning tools, which was proved by their acceptance of textual analysis software in our teaching. Also, according to the pre-course questionnaire for technical students, learning vocabulary and language patterns enables students to learn new genres to a large extent.

As noted, there was no universal guide on how to implement our blended concept in the teaching process. Thus, it was evident that the students from all three departments opted for the use of vocabulary lists, with the emphasis that the students of nautical studies and marine engineering preferred frequency exercises (Figure 2). It is interesting to note that the students of nautical studies preferred language activities related to the level of pragmatics (metaphors, idioms, phrases, identifying rhetorical structure and intertextuality).

This research has important implications for further work, particularly given the possibilities for establishing a genre-based approach in recognising the structure of the variety of technical genres. We are also aware that some data is not quantifiable (such as comments in the post-course questionnaire) and requires qualitative interpretation.

However, we still expect the empirical data in this study to point to a positive impact of the blended learning approach, particularly concerning the domain of the digital environment, which imposes a need for clearly processed linguistic information about specialised genres. We hope that the approach taken in this paper will inspire other ESP teachers to combine traditional and new approaches to reflect the use of different specialised genres in their unique contexts.

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