Assessing ESP Vocabulary and Grammar through Task-Based Language Teaching

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Abstract

This article aims to present the impact that the Task-Based Language Teaching (TBLT) approach had on students' use of English for Specific Purposes (ESP) vocabulary and grammar structures. The study took place in a course designed for a group of 11 Mechanical Engineering students at the University of Costa Rica, who expressed their needs, lacks, and wants in a needs analysis stage. To gather the necessary data for designing, implementing, and evaluating this mixed-methods study, the researchers collected both qualitative and quantitative data, through formal and informal interviews with students and stakeholders, questionnaires, a language diagnostic test, feedback sessions with course observers and evaluators, and the researchers' notes on students' performance. The results show that the impact of the TBLT approach not only had a remarkably positive effect on the students' use of ESP vocabulary and grammar structures but also helped them feel less nervous when being assessed and more prepared to do tasks in real life after participating in in-class simulations.

Resumen

Este artículo tiene como propósito presentar el impacto que el enfoque basado en tareas (TBLT, por su sigla en inglés) tuvo en la utilización del vocabulario en inglés con fines específicos (ESP por sus siglas en inglés) y las estructuras gramaticales por parte de los estudiantes. Este estudio se implementó en un curso diseñado para un grupo de once estudiantes de la carrera de Bachillerato y Licenciatura en Ingeniería Mecánica de la Universidad de Costa Rica. Ellos externaron sus necesidades, carencias y preferencias académicas con respecto a su nivel de inglés por medio de un análisis de necesidades, efectuado en una etapa inicial del proyecto. Para reunir la información necesaria para diseñar, implementar y evaluar este proyecto de investigación de métodos mixtos, los investigadores recolectaron información cuantitativa y cualitativa; utilizaron entrevistas formales e informales con estudiantes y depositarios, cuestionarios, un examen de diagnóstico del idioma inglés, realimentación brindada por observadores y evaluadores del curso, y las mismas notas de los investigadores. Los resultados demuestran que el impacto del enfoque basado en tareas no solo repercutió positivamente en el uso del vocabulario para fines específicos y en las estructuras gramaticales utilizadas por los estudiantes, sino también ayudó a que los estudiantes se mostraran menos nerviosos a la hora de las evaluaciones y se sintieran más preparados para realizar estas tareas en contextos reales al haber participado en simulaciones dentro de la clase.

Palabras clave: enfoque basado en tareas, inglés con propósitos específicos, evaluación de idiomas, aprendizaje de vocabulario

Language teachers sometimes question the impact that teaching approaches, different from what they normally use, may have on their students' language learning process. Approaches such as the Task-Based Language Teaching (TBLT) might seem unfamiliar to some language instructors who have adopted well-known methods, like the Presentation-Practice-Production method to teach general English, and who would consider an approach update an unnecessary risk. As the old adage goes, "if something is not broken, why fix it?" This uncertainty for an unnecessary risk led the researchers to study whether or not the TBLT approach would have an impact on students' use of English for Specific Purposes (ESP) vocabulary and grammar structures. Consequently, this research project aims to contribute to the understanding of the capacity to address the challenge of providing students in an ESP course for Mechanical Engineering with more engaging and purposeful vocabulary and grammar lessons by addressing the question: "What is the impact of using tasks

that simulate real-life situations on the technical vocabulary and grammatical structures used by a group of Mechanical Engineering students when carrying out the goals of an ESP course?" To determine this impact, the researchers posed five subquestions:

1. To what extent do the students use the appropriate ESP vocabulary needed to effectively explain how model cranes are built?
2. To what extent do the students use the correct grammatical structures to effectively explain how model cranes are built?
3. To what extent do the students use the appropriate ESP vocabulary needed to actively participate in a job interview?
4. To what extent do the students use the correct grammatical structures needed to actively participate in a job interview?
5. What are the students' attitudes towards the use of real-life simulations as assessment tools in an ESP course?

Review of the literature

To assess the efficacy of an ESP course, there are many elements to be considered; however, for this specific course, the researchers, focused on the learners' use of technical vocabulary and correct grammar structures. Hence, this review of the literature will first explore the challenges of teaching students technical vocabulary and correct grammar structures to perform tasks. Secondly, it will expand on some techniques to help students learn and apply both technical vocabulary and grammatical structures in a

meaningful way. Lastly, this review of the literature will dedicate a smaller section to the role of authentic materials and tasks in increasing students' retention of vocabulary items and grammar structures.

Challenges in vocabulary and grammar teaching. Every language is a living entity constantly undergoing changes. These sustained changes challenge teachers not only to keep updated but also to look for innovative and effective teaching strategies. Branches of EFL teaching, such as ESP, take these challenges a step forward since they not only include regular language features, but also, very specific information about the field. Specifically in the ESP area, challenges could be grouped according to the *what*, *how* and *who* to teach.

Teaching ESP courses implies particular challenges for the teachers. In many ESP courses students have a basic knowledge of the target language structures; however, they lack the technical vocabulary that the field requires. Here is where the *what to teach* becomes relevant. Nation and Newton (1997) have drawn attention to an important fact: technical vocabulary should be taught together with high-frequency words as the last ones will occupy an important percentage of the texts:

> High-frequency words of English should receive attention first because without these, it is not possible to use English in any normal way. These words deserve considerable time and attention. Once learners can use them, the decision as to which level to move to next depends on the use that the learners will make of English (p. 239).

This is essential since the technical vocabulary to be taught must be closely tied with the authentic tasks that students will perform in the ESP task cycle. The challenge for teachers is finding an equilibrium between the technical terms and concepts and useful general English which will allow students to perform the tasks in a natural way.

Another major challenge that teachers encounter while teaching ESP is teaching new labels for unknown words. According to Farstrup and Samuels (2008), the technical vocabulary that students come across in an ESP course is likely to be new labels for new ideas. As a result, teachers are charged with introducing their students to new words as well as providing them with the appropriate definitions and explanations. This is unlike general English because these courses usually tend to teach students new labels for familiar vocabulary (Farstrup & Samuels, 2008). For ESL teachers who are extremely versed in the content area that they are teaching, the issue of teaching new labels for new ideas may not be as much of a challenge as it is for teachers who are unfamiliar with the subject content. In either case if the concepts are new to students, teachers must be aptly prepared to enlighten students with regard to new vocabulary and what it represents. The main obstacle when providing students with the meaning of a concept is how to provide a definition or explanation that only uses words and ideas that students are familiar with.

Together with the *what* there are other considerations when teaching technical vocabulary, such as the *when*. Memory (1990) discussed pros and cons about teaching technical vocabulary before, during or after the task.

Memory has stated that unless the teacher makes a conscious effort to teach technical vocabulary, there will inevitably be terms or concepts that students will not learn (Memory, 1990). Despite the fact that Memory's research focuses on the time in which technical vocabulary would be more effectively taught in class, he also draws attention to different techniques that can be used to teach vocabulary in class such as glossaries and lists projected on the board. He suggests that the implementation of an effective technique during class time could yield a bigger revenue in terms of learning (Memory, 1990). One could assume that the discussion about vocabulary teaching has been resolved by academics; however, as Memory has stated: "teaching technical vocabulary before a textbook chapter is read, therefore, is viewed by many teachers as an unreasonable, if not impossible, instructional strategy" (1990, p. 40). Limited time is now a characteristic for almost all tasks that one can think of. Meticulous scaffolding may be perceived as time consuming at first, but in the long term it tackles different proficiency levels within the group and even lack of training on certain vocabulary teaching strategies by the teacher. Thus, the *what* and *when* of teaching technical vocabulary are essential in the learning process and they must be included into the variables of ESP class planning.

Another dilemma that implies a challenge in ESP is grammar teaching and its importance. Indeed, the incorporation of grammar will be strictly related to the population's needs analysis results. Nonetheless, the *how* we teach language grammar in ESP classes requires specific strategies and lots

of creativity. For everyday planning, the decision of how much grammar to include usually depends on several factors, for instance, population's proficiency level, the task requirements and the occupational field itself. Grammar teaching in ESP courses has aroused an interesting challenge: how to embed grammatical structures in communication-focused tasks. Students should be explicitly taught the importance of correct grammar structures while communicating: "grammatical structures are learned and used effectively when they are presented in contexts to serve communicative purposes" (Abdulwahed, 2010, p. 143). The most that students can relate their own experiences to the contexts and tasks presented in the ESP classes, the easier it will be for them to acquire proper grammar structures.

Finally, the *who* we teach has gained a lot of relevance in the last decades. Despite the fact that the term *millennials* has become trendy for marketing campaigns, teachers cannot ignore the fact that different generations are mixed in the language classrooms these days. Each of those generations is characterized by very distinct traits, ways of learning and, perhaps most importantly, the way they use technology to learn. Galina Kavaliauskienė (2012) has defined millennials as a "generation (that) grew up with technology, prefers to communicate through e-mail and text messaging rather than face-to-face contact [...] and it is identified as confident and technologically advanced" (n. p.). A generation gap between students and teachers has always been the norm; however, many teachers lack technological literacy to keep up with their students learning needs. The challenge for teachers now

is how to include technology as part of their teaching strategies in order to maintain students' interest and ease their learning process.

The challenges are factual, but there is also a lot of research done regarding the search for effective classroom solutions. There are several techniques and strategies for vocabulary and grammar teaching in ESP courses that can simplify the students learning process.

Techniques to learn and apply vocabulary items and grammar structures. Owing to the significant challenges posed by vocabulary and grammar acquisition in the EFL classroom, teachers must implement techniques to facilitate their learning. Without vocabulary there can be no production and without grammar there can be no accuracy in production. As previously mentioned, the importance of these two language features goes without saying and due to their high value, a great deal of research and suggestions on how to teach them have been put forward. For the purposes of an ESP population, this literature review hones in on useful techniques used in the teaching of specific populations.

Thornbury (1999) has outlined two ways in which learners can understand a grammatical structure: the deductive path and the inductive path. In the deductive approach, a grammar rule is explicitly presented before students are asked to produce their own examples, whereas the inductive approach requires students to discover the rule after exposure to several samples of the target structure (Thornbury, 1999). For an ESP course in which the teachers have limited time with their learners the latter approach

appears to be the best option. According to Thornbury, "working things out for themselves prepares students for greater self-reliance and is therefore conducive to learner autonomy" (1999, p. 54). After taking an ESP course that uses the inductive approach, students can take its fundamentals, which favor pattern-recognition and problem-solving abilities, and use them to continue identifying and learning new grammatical structures long after the course has concluded. Another major advantage of the inductive approach is that "rules learners discover for themselves are more likely to fit their existing mental structures than rules they have been presented with. This in turn will make the rules more meaningful, memorable and serviceable" (Thornbury, 1999, p. 54). Learners will be able to access rules learned through the inductive approach in their everyday activities and manipulate vocabulary around these rules to respond and react to different situations.

Although the inductive approach offers several advantages, Thornbury (1999) has suggested that in some instances it might be necessary to use a more deductive approach to grammar teaching. For difficult grammatical structures, learners may spend a significant amount of time and energy trying to work out the rules. In addition to the severe cognitive load that some rules demand, "learners often hypothesize the wrong rule, or their version of the rule may be either too broad or too narrow" (Thornbury, 1999, p. 54). In such cases it is best for the teacher to explicitly teach the grammar rule. A big part of finding the balance between the inductive and deductive approach is knowing your students.

According to studies, students actually prefer when teachers present them with the grammar rules (Thornbury, 1999, p. 55). For an ESP course that implements the Task Based Language Teaching approach, the language focus section of the class offers a practical solution for this balance between deductive and inductive approaches. The language focus often comes after the main task in the class cycle and draws students' attention to a target structure by honing in on specific examples from a text used in previous activities. According to Nunan (2004), the provision of examples affords students the opportunity to formulate their own rules by identifying patterns, while the inclusion of a brief explanation of appropriate situations to use the target structure guides students down the right path of when to use certain grammatical structures (p. 14). This combination allows teachers to teach grammar in a way that is not only efficient with regard to time, but also effective in the grooming of autonomous learners.

Similar to the teaching of grammar, Schmitt (2007) suggested that "any vocabulary program needs to contain two strands: an explicit strand to present the teachable word knowledge aspects of high value words and an incidental learning strand where (a) those words are consolidated and more is learned about them, and (b) a multitude of other new words are met" (p. 751). The pairing of these two strands empowers students with what they need to know now and points them in the right direction as with the tools necessary for what they would need to learn in the future.

The explicit teaching of vocabulary is a major component of an ESL teacher's role in the classroom.

Finding creative and salient ways to teach vocabulary is a huge challenge that needs to be met with diverse solutions. One common method used by teachers is word pairing. Nation (2001) has done research showing that students can successfully learn a great deal of words using this technique, suggesting that students should look at one word in the pair and try to retrieve the other. According to Nation and Meera (as cited in Schmitt), "each retrieval strengthens the connections between the form of the word and its meaning" (Schmitt 2007, p. 753). These word pairs can be presented as physical or digital flashcards, but according to Schmitt, "teachers should consolidate and enrich this initial knowledge with contextualized practice in subsequent classroom sessions", since the biggest criticism of using word pairs is that words are not presented in context.

The teaching of words in their respective contexts cannot be overlooked, and teachers can aid students by teaching the underlying meaning of a word. The underlying meaning of a word refers to the underlying trait that many polysemous words in English have. Nation (1990) has suggested that instructors define the underlying meaning concept in order to maximize the effect of teaching by helping students to understand the word in a variety of different contexts (p. 72-73). In an ESP course it is impossible and ill-advised to teach all the meanings of a word in one class. The underlying meaning concept appears to be a time-efficient and useful way to combat tricky words.

In order to facilitate vocabulary learning some authors consider maximizing learner exposure to English as key (Newton, 2001, & Schmitt, 2007). Nation (1990) did research on numerous studies which concluded that a word required from 5 to 16 repetitions to be learned. According to Schmitt (2007), "the fact that vocabulary is learned incrementally leads to the implication that words must be met and used multiple times to be truly learned" (p. 749). Teachers can present words and recycle them later so that students can have enough exposure to these words to decrease their chances of forgetting the new vocabulary. Nation (1990) has advised that words should be recycled soon after the initial lesson in which they were presented. Then, these words should be seen again at regular intervals. When planning a course, teachers can mark specific dates to review vocabulary so that their students can learn more efficiently and so the teachers themselves will have a guide for revision (Schmitt, 2007).

Newton (2001) added that teachers can increase exposure by only using English in the classroom and by implementing group work. Through group work students can interact and learn new vocabulary from their peers. Group work can render a great deal of success in this regard, especially in an ESP course with varying levels of proficiency. Another way in which teachers can expose students to key vocabulary in an ESP course is through narrow reading. Narrow reading refers to reading several texts that are all related to a similar topic. Schmitt (2007) purported that "reading one subject means that much of the topic-specific vocabulary will be repeated throughout the course of reading" (p. 752). For ESP courses, teachers can choose the topics that students are most interested in or

the most relevant topics for them and select readings that will contain key recurring vocabulary items.

In order to focus on the most important vocabulary items related to a specific field or subject, teachers can benefit from the findings in corpus linguistics. Through corpus linguistics teachers can discover the most frequent words within a genre as well as the most common formats for certain types of discourse (Schmitt, 2000). In addition to providing insight into frequency, corpus linguistics reveals how words collocate with other words. Teachers can take full advantage of corpus linguistics by teaching collocations as well as training their students to identify them. Nattinger and DeCarrio (as cited in Schmitt) have suggested that teachers pay attention to words that are more than five words away to find every collocational relationship (2000). Schmitt goes on to encourage the view of words as "parts of lexical phrases in interconnected discourse" (2000, p. 78). In an ESP course, teachers can provide students with strings of words that commonly go together via the presentation of useful language needed to complete activities or during the pre-task phase. In order to find these collocations, teachers can use corpora databases as well as their own research and investigation of authentic samples. One of the advantages of using corpora studies is that teachers provide students with examples that are realistic, and as a result these word chunks can be readily applied. In addition to the authenticity provided by corpora studies, teachers no longer have to spend time creating examples for students (Schmitt, 2000). Instead of creating materials with language

samples, teachers can extract examples from authentic texts in order to present vocabulary and grammar that are both relevant and appealing to students.

The role of authentic ESP materials and tasks to increase retention. To define what authenticity is one would have to refer both to the tasks at hand and the materials given to students to perform such tasks. When talking about authenticity, teachers and materials developers must consider first the field they are working with as to identify real-life scenarios the learners will encounter either in their academic or occupational lives. After conducting a proper needs analysis, teachers and materials developers can then determine which language functions, lexical items, pronunciation features, and mainly, which tasks their learners will realistically perform in those real-life scenarios previously identified. This will result in a selection of tasks and materials that will reflect their learners' fields, needs, lacks, and wants inherently.

Teachers and materials developers may feel tempted to look for a published textbook to satisfy the need of presenting their students with engaging and already tested materials; however, "no textbook or set of materials is likely to be perfect" (McDonough, Shaw, & Masuhara, 2013, p. 65). Byrd (2001) has also pointed out that the fit between a curriculum and textbooks is difficult to achieve for two main reasons: there are not clear curriculum statements in programs, and if there are any, they are too specific for a publisher to focus on (pp. 415-416). Hence, ESP teachers and materials developers might come to the conclusion that it is better to create their own materials or

to adapt existing ones than to try to find an already published textbook, hoping that it would address the specific needs of a very particular ESP population, while presenting students with a desired language learning methodology, such as the communicative language teaching approach or the task-based language teaching approach.

The authenticity of a task can be determined by many factors such as the level of formality or informality required to perform a task, the number of speakers involved in it, the nature of the task—written or spoken—, and even the degree of shared cultural knowledge the learners must possess to complete a task (Robinson, 2011, p. 36). What to say, when, and how to say it play a paramount role in performing a task. All of these factors must be taken into account when designing tasks and their respective materials as to guarantee that learners will be given the proper scaffolding in those areas, or the necessary ones, to perform the tasks correctly, through careful preparation during pre-tasks and through an appropriately elaborated main task that will have learners apply everything that was practiced during the pre-tasks. As previously mentioned, it is important to recall that the more authentic a task is the more relevant it will become for learners, which will in turn make it meaningful and easier to retain, because "authentic tasks . . . stimulate 'whole brain processing' which can result in more durable learning" (Mishan, 2005, p. 42).

This is why teachers and materials developers must study each task to be taught in depth to be able to determine which specific features their students will need to learn, which may vary from culture to culture. Even though the design of an ESP course seems like something that could be later applied to a similar group of ESP learners, it can be compromised because of cultural differences. As an illustration, the authenticity of a task could lose validity if Japanese students are taught that they must make direct and sustained eye contact when expressing strong disagreement in a meeting with Japanese and English-speaking superiors. As the Japanese culture can be considered a collectivist society, it is customary that people are not to show assertiveness or direct confrontation in public—let alone maintain direct eye contact with superiors—as a way to "keep in-group harmony" (Hofstede, Mink, & Hofstede, 2010, p. 234). Consequently, the task described before may contain features of tasks to be taught if the students were to deal with more individualistic cultures, such as the American culture. However, under these specific circumstances, this feature would not be authentic, as it does not resemble what learners will do in real life in their specific contexts. For this reason, teachers and materials developers must take cultural issues into consideration, as to select wisely what to teach and how to teach it.

If teachers and materials developers intend to make learners retain vocabulary items or grammatical structures, these are to be presented contextually, meaningfully, and repeatedly, but most importantly, realistically. This can be achieved by making use of authentic texts. Tomlinson (2011) has described an authentic text as "a text which is not written or spoken for language-teaching purposes" (p. ix). Hence, teachers and

materials developers must conduct the necessary research to find or adapt real-world texts that would fit their purposes. Adapting authentic texts can take many forms: adjusting the speed of a conversation to make it slower for beginning students, presenting just one paragraph of a long text, modifying grammatical structures and syntactical patterns to simply a text, and even highlighting or bolding words in a text to make language features more salient. The way teachers can adapt materials is as manifold as one can imagine. Therefore, to help learners retain vocabulary items and language structures, teachers and materials developers normally create materials using authentic texts and adapt them to their population's fields, needs, lacks, and wants in an attempt to teach these items both meaningfully and realistically. Some examples for authentic materials are online local newspapers, YouTube videos, npr.com audios and scripts, university online lectures and webinars among others.

There are different ways to help learners achieve the goal of retaining vocabulary and language structures. Tomlinson (1998) has suggested that materials should "achieve impact in the sense that they arouse and sustain the learners' curiosity and attention" (p. 4), and sometimes, the only way to make sure one arouses students' curiosity is by selecting the right authentic materials while providing them with enough input and opportunities to encounter and use new or useful words/chunks in rich and meaningful scenarios. Graves (2006) mentioned that "one way to build students' vocabularies is to immerse them in a rich array of language experiences so that they learn

words through listening, speaking, reading and writing" (p. 5). Therefore, this implies that teachers and materials developers should consider pre-teaching contextualized vocabulary items and grammatical structures that will be easily found in their students' real-life scenarios so that the authentic materials used give validity to the tasks to be performed in class. Additionally, Dudley-Evans and St. John (1988) proposed that in order to stimulate and motivate learners, materials should present students with novel information, grounded in the learners' experience and knowledge (p. 216). This supports the thesis that ESP materials should reflect in as many ways as possible the learners' areas of study, as to increase motivation and retention in the short and the long term.

It is important to mention that even when all of the aforementioned elements are taken into account for the design and creation of materials, there will be students who will have a difficult time retaining vocabulary items or grammatical structures correctly. Known as "Cinderella factors," learner variables such as personality, motivation, attitude, aptitude, preferred learning styles, and intelligence can hinder students' language learning process in significant ways. More often than not, age, sex, cognitive style, and accepting the explicit teaching of learning strategies—cognitive, metacognitive, and social/affective—can determine the degree of students' success in a class (Dörnyei, 2012, p. 91), regardless of a flawless design, selection, or adaptation of authentic materials and tasks.

While the researchers were teaching the ESP course designed for mechanical engineering students, they aspired to

meet the challenges of teaching vocabulary and grammar head-on by implementing useful techniques and strategies as well as presenting students with authentic tasks. These tasks were intended to be as authentic as possible to simulate tasks in the students' fields that had to do both with their academic and delayed needs.

Methodology

This research article includes quantitative as well as qualitative data. Both research approaches were useful in collecting information that supported the answers to the main research questions; therefore, this research can be defined as mixed-methods research and consists of three main stages. First, the researchers analyzed the influence of tasks on the use of appropriate ESP vocabulary and grammatical structures when students needed to explain how model cranes are built. The second stage had to do with gathering data to determine the extent to which tasks that simulate real-life situations can influence students' ESP vocabulary and grammatical structures selection when actively participating in a job interview. Finally, the last stage dealt with identifying students' attitudes towards the use of real-life simulations as assessment tools in an ESP course. To obtain the necessary information, the researchers made use of several techniques to guarantee multiple perspectives on each matter: researchers' own notes, surveys addressed to practicum supervisors and observers who consisted of students from the Masters program for Teaching English as a Foreign Language, as well as surveys addressed

to students, comments researchers made in students' feedback forms, video and audio recordings of student presentations, and student self-evaluation forms.

Participants. For this research project, 11 mechanical engineering students, two practicum supervisors, three researchers, and six students from the Masters program for Teaching English as a Foreign Language participated in the final course implementation and evaluation. Ten of the mechanical engineering students were taking their BA in mechanical engineering while one of the students was already enrolled in the *Licenciatura* program. Out of the 11 students, three of them were already working, and the others were full-time students. The students' English proficiency level was very heterogeneous: four of them had a basic level, three had an intermediate level and four had an advanced level.

Instruments. To collect data, eight instruments were used: two instruments for course evaluators and observers, two feedback forms for students' presentations, one student self-evaluation form, and three unit evaluation surveys addressed to students. The first two instruments were designed for course evaluators and observers to assess students' use of ESP vocabulary and target grammatical structures when explaining how model cranes work—which was part of Unit 1—and to actively participate in job interviews—main goal in Unit 2—respectively. These instruments included a scale to rate four different statements about the expected students' performance. It also included a second part in which there were

open ended-questions so the course evaluators and observers could add their perceptions extensively.

Two rubrics were created with the objective of providing students with feedback after two different oral presentations: defending a proposal and participating in a job interview. These two instruments were task-specific analytical rubrics which evaluated specific contents reviewed in class for each task. For instance, the rubric for the job interview included a category for dress code and body language. Even though these categories were not directly related to language learning itself, they were essential to achieving the task goal.

One more instrument was a self-evaluation form for students to evaluate their own performance after the job interview simulation. This instrument was used as a post task, and it included three reflection questions about the main task. The second part for this instrument included a scale for the student to rate his or her own performance by analyzing three statements that described expected abilities after the main task, in this case, the job interview.

Finally, the researchers made use of three surveys that the students filled out to evaluate the use of tasks as assessment tools. Most of these last surveys were completed as homework and digitally, through the use of Google Forms. These consisted of five parts. The first four utilized scale rates to obtain information about the course content, task difficulty, and students' preferences. The fifth part contained three open-ended questions that enabled students to express their opinions freely. The last survey aimed to evaluate the course in general. It had four parts out of which the first three used scale rates

to assess tasks, materials, and rubrics. The final part contained three open answer questions which allowed students to elaborate on their preferences.

Procedures

Unit 1. To determine the extent to which the students used appropriate ESP vocabulary and correct grammatical structures needed to effectively explain how model cranes are built, the researchers analyzed their notes and compared them with the answers obtained from Instrument 1: Course Evaluator. The objective was to find possible comparisons or patterns between the researchers' notes and the observations made by one of the course evaluators. Additionally, students were asked to take a small survey to express how they felt about Unit 1. This survey included statements like: *The stages of the lesson guided me to achieve the objective of the lesson* and *the lessons from Unit 1 prepared me for the evaluation*, which helped the researchers to obtain information about the students' perception in relation to the tasks and its influence on vocabulary and grammar structures.

Unit 2. To identify the extent to which the students used the appropriate ESP vocabulary and correct grammatical structures needed to actively participate in a job interview, the researchers had the students give two oral presentations.

a. One of them was about defending a personal proposal for a work problem. These were individual oral presentations in which students were given

a mechanical engineering problem, similar to the ones used during real job interviews, which needed to be solved. They were given 5 minutes to analyze the situation, and then they were to defend their proposals in front of the class. For this presentation, the three researchers separately evaluated each student, using a rubric designed for this presentation. As there were some observers from a M.A. program, they were given, as well as the course evaluator present, "Instrument 2: Course Evaluator" for them to give the researchers more insight and evidence on the students' performance. Consequently, for this evaluation, the researchers triangulated the information from two observers, one course evaluator, and their own comments written in students' feedback forms.

b. The last evaluation for this research project was the participation in a job interview simulation. Sitting in small groups of three and four students, they were interviewed by one of the researchers. The data from this test were obtained by analyzing the comments the researchers wrote in students' feedback forms and by comparing them with the students' self-evaluation form. What is more, students were also instructed to complete a survey explaining how they felt about the progress of the course and the usefulness of what had been studied in Unit 2. Finally, students were given "Instrument 3: Student Attitude Toward Evaluation" to collect students' opinions about the use of authentic tasks as assessment tools in Units 1 and 2.

Results and Discussion

This study attempted to determine the impact of using tasks that simulate real-life situations on the technical vocabulary and grammatical structures used by a group of Mechanical Engineering students when attempting to achieve the goals of an ESP course. The following section presents the most salient findings that helped answer the previous research question. The results will be analyzed based on each subquestion by unit. To protect students' identities, they were assigned a code that will be the same in each of the analyses.

Unit 1. When asked why the students had or had not succeeded in using the appropriate ESP vocabulary to effectively explain how model cranes are built, the course evaluator noted that the students always used the appropriate name of each part of a crane and vocabulary related to materials during the main task, which was also supported by the researchers' notes. The evaluator goes on to explain that the students had been successful because "during all the different stages of the lesson, the students used the ESP vocabulary in oral and reading tasks. When required, they were able to effectively describe what materials they needed and how to build their model cranes." This shows that vocabulary teaching was effective throughout the lesson, which may have helped students become better equipped to deal with the main task. To exemplify, one student mentioned that they could use a wooden block as a counterweight, and another student said they could use a metal binder clip as their hook during

one of the pre-tasks in which they had to think about the possibility of building a model crane with materials they could find at home.

Similar to what the researchers had recorded about the use of imperatives during the main task, the evaluator considered that the students had sometimes used imperatives, which meant that they partially succeeded at this. The course evaluator expanded on this by explaining that the students did not always use imperatives because "at times they were a little silent during the building part of the main task. They could have been instructed more directly to use them by designing a step in the task that required it." The researchers noticed this gap when executing the lesson, as in some cases, they noticed that the students were using language chunks, such as "You cut this. Yes, I think like that. We put this here?" when observing how students worked in their groups. Hence, the researchers must acknowledge a limitation in this matter. The researchers speculate that the cognitive load of the activity may have been too great and this, in turn, could have been the reason why the students worked silently and individually. What is more, the researchers also conjecture whether or not they may have overemphasized the importance of using imperatives to build a model crane in class. For these reasons, the results obtained show partial attainment.

As the students were following written instructions to build a crane, they were expected to use imperatives to describe how they had built their model cranes in the post-task. Each group was assigned one of the five steps in a reading, and they were to explain it back to the class. Based on the researchers' notes, one spokesperson per group described what each step was about, using imperatives 100% of the times. Even though one group could not finish on time, they were asked to report what they did in the first step, which they managed to do so by using imperatives and sequence markers. For this section, the course evaluator supported the latter argument by confirming that during the post-task students always used imperatives and sequence markers to explain how they had built their cranes.

Interestingly, 43% of the students mentioned something about building the model crane as their favorite Unit 1 activity. When asked about the activities that they had enjoyed the most from Unit 1 students said, "building a crane model using recycling materials. The construction of the rocket in the evaluation. Designing the crane and disputing answers. Build diferents [sic] machines and to learn vocabulary about this".

The researchers believe that obtaining data like this in an open question reflects that the lesson plan was correctly executed, not only because students were able to use the appropriate ESP vocabulary and the grammatical structures, but also because they considered this lesson as something memorable and appealing. As explained by Mishan (2005), this can aid students' vocabulary and language learning retention greatly, since students' language acquisition process becomes enjoyable and meaningful because these "authentic texts [have an] impact on affective factors essential to learning, such as motivation, empathy and emotional involvement" (p. 41).

Unit 2. As mentioned previously, Unit 2 contained two evaluations that simulated real-life tasks: the pleading of a personal work proposal and a job interview simulation. It is not unusual that Mechanical Engineering applicants are asked to solve hypothetical work problems in their job interviews. Thus, these two evaluations were intrinsically related.

Due to the formality of a real job interview, the language focus for these evaluations was the proper use of modals could / should / would especially with the intention of expressing possibility or providing advice. During the evaluations, 100% of the students were able to use at least one modal correctly. Interactions during job interviews need to be concise and precise. This was taught as part of the non-verbal language tips during class and that is why the researchers consider that the proper use of at least one modal is considered as a positive input towards answering the research question. Students used phrases previously taught as useful language, which included the correct use of modals such as: "from my experience, I think you should use solar panels…", "with the information given, I think we could get the water by gravity…", "I would suggest using a wind turbine in this case" and "I would go to the past…" among many others. The course evaluator perceptions go in the same direction: "Is succeeded in correctly using those modals because their presentations and proposals sounded logical, plausible and clear in relation to content thanks to an appropriate use of these modals and other important structures such as formulaic language previously provided in class". Student teachers identified some pronunciation mistakes for modals during class performance. For example, /kuld/ instead of /kʊd/ for *could* or /wʊld/ instead of /wʊd/ for *would*. These mistakes were corrected during class, and overall, they did not interfere severely in communication.

Technical vocabulary and grammatical structures studied in previous classes allowed students to express their ideas in a clear way and also to project confidence and professionalism while defending their proposal and participating in the job interview simulation. In this case as well, 100% of the students were able to correctly use at least one word from the technical vocabulary studied in class and one grammatical structure studied in class. This result was supported by the data extracted from the job interview videos. On average, students used technical words 2.5 times in their presentations. All technical vocabulary was properly used. The amount of technical vocabulary depended on each students' proposal. In none of the cases a technical vocabulary word was the cause of a misperception or prevented a fluid communication. Furthermore, the initial proficiency level of students might have enhanced the clarity of their message, but according to the previous needs analysis it did not represent a significant advantage regarding technical vocabulary use. This is the reason why researchers consider that the use of at least one technical vocabulary word as a positive answer for the research question. One of the course evaluator's comments supports the researchers' finding: "The Ss were highly successful in defending their proposals and this was due to a high extent to the effective use of the necessary ESP

vocabulary that the task required." Furthermore, from the proposal feedback forms, researchers could point some vocabulary that was used by several students, such as the following: biodigestor, wind turbine, power source, axle, and budget. Additionally, the fact that less proficient students such as Students C and D used four and five grammatical structures studied in class during the job interview showed that the grammar studied worked as a scaffold for these students to convey their ideas appropriately and assertively. Table 1 displays the technical vocabulary and grammatical structures used by students during the job interview simulation.

Table 1

Times that students used grammatical structures and technical vocabulary studied in class during a job interview simulation.

Student	Times modals were used	Samples	Times technical vocabulary was used	Samples
A	3	We can build solar panels. You can warm lunches.	2	solar panels, I'm culturally-sensitive
B	2	If I could travel back in time, I would see	5	geothermal plants, wind turbines, solar panels, to install, I'm a proactive person
C	5	We can by compressors; we can combine; I would suggest it	5	compressor, budget, I'm an efficient, innovative, organized professional
D	4	We can use… I would suggest	1	wind turbines
E	1	I would require, I would say	3	entry level, innovative, biodigestor
F	2	We can use a rough top unit	3	drills, team player, efficient
G	1	They could reduce	2	entry level, solar panel

H	2	I could explore, I could analyze	1	Turbines
I	1	I can work with	1	Innovative
J	1	They can have facilities	2	enthusiastic student, I consider myself

Technical vocabulary for Unit 2 had the particularity that it included mechanical engineering terms such as compressor, drill or wind turbines, but it also included personal description vocabulary such as culturally-sensitive, innovative and enthusiastic. The language choice responds to the main objective of Unit 2, which states that students will be capable of effectively briefing their information for a specific job position and participate actively in a job interview. The relation between the Unit goal and the successful use of technical vocabulary and proper grammatical structures was pointed out by one of the class observers:

Students succeeded in the use of ESP vocabulary because the activity (evaluation) was very relevant for them [...] as future mechanical engineers [...] As an observer, I consider that all the proposals were very interesting and that students defended their solutions with a lot of confidence, fluency and motivation. The use of technical vocabulary was very extensive (wind, residue, combustion engine, centrifugal pump, corrosion, natural gas, maintenance, hydroelectricity, efficiency, solar energy, advantage, air conditioning, compressor, etc.)

and students had a very good performance in front of the class.

It is worth mentioning that to gather the data for Table 1, the researchers did not take notes while they were interviewing the students. As explained before, the researchers played the role of interviewers; hence, they were fully engaged in the conversations with the students. For this reason, they recorded the students in audio and in video and later analyzed these recordings to be able to come up with the data to determine how successful the students had been at this task.

Students' attitudes. The data obtained from the last survey shed some light on students' attitudes toward the use of real-life simulations as assessment tools in the course. The students completed a survey that consisted of Likert scales and some specific open questions. The items of the survey were designed to collect data on how students felt about this type of assessment as well as how they felt during the assessment tasks. The results of the survey proved to be very promising for the researchers in their quest to investigate how realistic and authentic students perceived the tasks to be. 60% of the students agreed that

the evaluation tasks were realistic, and 80% of them claimed to be motivated by the fact that the tasks were authentic. These results demonstrate that the evaluations met one of the key principles of language assessment in that they were authentic and provided students with situations that were natural to their field, interesting, and enjoyable (Brown, 2004).

In addition to responding positively to the authenticity of the assessments, the results of the survey show that students felt aptly prepared for the evaluations. Only 20% of the students who completed the survey said that they had not felt prepared for the assessment. The small percentage of students who felt unprepared points to the content validity achieved by the assessments used in units one and two. Brown (2004) defines content validity as "the extent to which the assessment requires students to perform tasks that were included in previous classroom lessons" (p. 32). 80% of the students confirmed that the assessment tasks were similar to the tasks done in prior classes. The researchers noted that assessment days closely resembled class sessions and this may have contributed to lower student anxiety. Results showed that only 40% of the students felt nervous during the assessments, while a meager 20% felt frustrated. This data, paired with the fact that 80% of students described the assessments as being fun, reveals that their

assessment experience was an overall positive one.

Another important principle of testing that was met by the use of real-life simulations as assessment was washback. Washback is defined as "the effect a test has on teaching and learning" (Hughes as cited in Brown, 2004, p. 28). Content validity usually goes hand in hand with washback, but washback can also refer to it, and how students recognize their strengths and weaknesses after doing an assessment. 60% of the students believed that after doing the assessment tasks for units one and two they felt prepared to do the tasks in real life. These results show that these students were able to recognize their strengths, whereas 40% of the students recognized that they still needed to improve on some aspects of the tasks in order to successfully complete them in real-life situations. In order to facilitate washback, students were always awarded the opportunity to see the rubrics for each evaluation prior to the assessment tasks. The results from the survey showed that 80% of the students knew what they were going to be evaluated on after looking at the rubric. The same percentage of students felt confident in what they had to do and felt prepared to achieve the highest score on the assessment task. Table 2 below highlights the most important results obtained from the survey.

Table 2

A summary of students' responses to a survey on their attitudes toward the assessment in units one and two.

Students agreed that	Percentage of students (%)
Evaluations were realistic.	60
They felt motivated by the use of authentic tasks.	80
They felt unprepared for the assessment.	20
The assessment tasks were similar to classroom tasks.	80
They felt nervous during the assessments.	40
They felt frustrated during the assessment.	20
The assessments were fun.	80
They felt prepared to do tasks in real life after assessment.	60
The rubric's descriptions made them feel confident about what they had to do.	80
The rubric made them aware of what was going to be evaluated.	80

The results seen above, and previously discussed clearly affirm that in general students had a positive attitude towards the use of real-life simulation as assessment tools. In order to unearth which assessment was their favorite, the researchers posed the question to students. Figure 1 shows that most students preferred the job interview assessment. Students described it as being "the most realistic" and "the most challenging that took the best out of us."
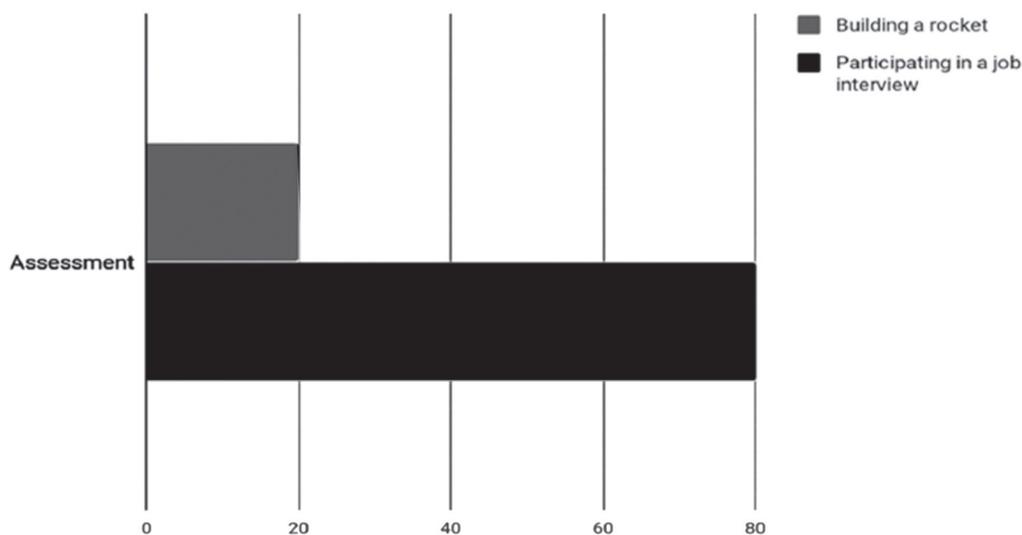
Figure 1. Assessment students enjoyed the most.

The figure illustrates all assessments used in Units 1 and 2 and shows students' preferences in the form of percentages. When asked which assessment was their least favorite, students reported that defending a proposal and constructing a rocket were their least favorites as can be seen in Figure 1. They claimed that they felt nervous in front of their classmates while defending a proposal. This may have been partly related to the fact that the first unit focused mostly on reading and defending a proposal was their first graded oral presentation in unit two. Students may have still been adjusting to speaking in front of their classmates.

The researchers believe this because the job interview was done in front of the class three weeks later and students appeared not to have problems with regard to nervousness for this task. With respect to the construction of a rocket, students complained that their teams did not have enough time to complete the assessment task. Most groups were able to complete the task, but the fact that 40% claimed that this was their least favorite task suggests that the researchers need to reconsider the practicality of this assessment to find ways to make it more feasible so that all students would be able to complete the task.
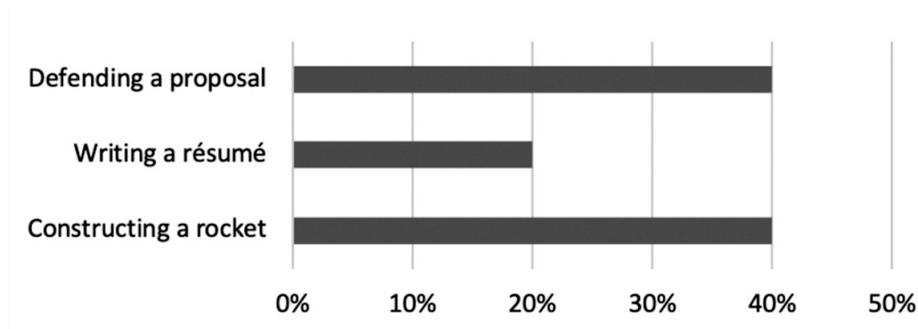
Figure 2. Assessments students enjoyed the least.

This figure illustrates students' least favorite assessments as percentages. The results obtained by the survey clearly affirm that in general students had a positive attitude towards the use of real-life simulation as assessment tools. In addition to revealing students' attitudes, the researchers were also able to conclude, as a by-product of the survey, that the real-life simulations they created for assessment met the cardinal criteria proposed for language assessment.

Conclusions

The following conclusions were made after analyzing the results of this research project. With respect to the extent to which students could use vocabulary specific to the construction of a crane, the researchers observed and concluded that the Mechanical Engineering students were able to use the proper names of the parts of a crane and use vocabulary related to materials. Through their use of words such as wood and metal, students were able to successfully describe how model cranes are built throughout an entire class. Although students were able to use the appropriate vocabulary,

they were only partially successful at using imperatives while building their model cranes. The students showed command of the structure only after being taught how to use it, which happened during the post-task stage of the lesson plan. More explicit teaching of the grammatical structure during the pre-task phase could have helped students in making use of the structure in the main task.

The fact that 43% of the students chose building a model crane in class as their favorite activity in Unit 1 led the researchers to speculate that since students were engaged in multiple levels—reading, listening to their partners, building, fixing, and selecting materials—this activity targeted different types of learners and intelligences, and this may have been the reason why this activity was selected as their favorite.

For Unit 2 the researchers can affirm that 100% of the students were able to effectively use ESP vocabulary and proper grammar structures while defending a work proposal and participating in a job interview simulation. The fact that both evaluations in Unit 2 were real-life tasks that students will most likely face in the future created

an interesting challenge for the students which translated into visible engagement towards the tasks throughout different classes. 60 % of the students felt prepared to do tasks in real life after participating in the simulations during assessment. The researchers believe that these data reveal that the assessment and its procedures provided positive washback in the sense that students were able to identify their strengths and weaknesses for the authentic situations they were presented with. In addition to providing positive washback, the researchers ascertain that the use of real-life simulations that directly reflect the activities done in previous classes reduces anxiety during assessment. The researchers came to this conclusion because 40% of the students felt nervous during assessment, and only 20% of the students felt frustrated.

To answer the question posed at the beginning of this article, the TBLT approach has proven to be not only successful when teaching ESP vocabulary and grammatical structures with a population of Mechanical Engineering students, but it has also been regarded, by the students themselves, as motivating and realistic. These two descriptions confirmed that the TBLT approach was the appropriate choice to tackle this challenge, and the researchers encourage language professionals to make use of this approach when dealing with similar populations.

- The researchers believed that having a unit on helping students become better readers and listeners would be regarded as a very appealing and useful unit. However, when some of students were informally asked about what they thought of the first two units, they said that they preferred Unit 2, since the tasks were more realistic. Hence, the researchers suggest that this be considered for future projects. Future researchers can think of including a shorter unit on reading and listening. Even though the researchers thought teaching reading and listening strategies would increase students' motivation—as it would tackle students' immediate needs—, it seemed that the units which focused on delayed needs were more interesting and motivating for students.
- Even though Unit 1 was not considered students' favorite unit, the researchers believed that having this unit was completely necessary, since it also focused on strategy training.
- Taking into account the students' perception towards the evaluation tasks, student teachers should include more individual presentations within the pre-tasks in order to reduce the anxiety that the first open class presentation (in this case, defending their own proposal) creates on students.

Recommendations

The following recommendations are provided for future research projects to guarantee a successful ESP course.

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