UNIVERSIDAD DE COSTA RICA
SISTEMA DE ESTUDIOS DE POSGRADO

# THE INFLUENCE OF PRE-TASK INSTRUCTION ON TARGET LEXICAL ITEM USE IN AN ONLINE ESP COURSE FOR MECHANICAL AND ELECTRICAL ENGINEERING STUDENTS

Trabajo final de investigación aplicada sometido a la consideración de la Comisión del Programa de Estudios de Posgrado en Enseñanza del Inglés como Lengua Extranjera para optar al grado y título de Maestría Profesional en Enseñanza del Inglés como Lengua Extranjera

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## Dedicatoria

I dedicate this work to my parents Iris Alvarado and Carlos González, who have always believed in me and whose unconditional support has inspired me to go beyond my limits. My mom, in particular, is the reason why I majored in English in the first place. You've been the greatest example of perseverance, determination, and hard work. Finally, this dedication also goes to my life partner Alison, who stood by me through many nights. Your loving and encouraging words became a lighthouse in the storm.

*Carlos*

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*Fanny*

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*Kelsey*

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*Kelsey Peterson*

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## Table of Contents

**Resumen**

A medida que más profesionales requieren experiencias de aprendizaje más especializadas de un idioma, los cursos de inglés para fines específicos (ESP) se han tornado más relevantes. En Costa Rica, el idioma inglés ha sido un pilar fundamental para su desarrollo económico, y la creciente necesidad por currículos más específicos ha sido abordada por la Universidad de Costa Rica (UCR) en el Posgrado en la Enseñanza del Inglés como Lengua Extranjera. Esta investigación dirigió sus esfuerzos a analizar las necesidades de estudiantes de ingeniería eléctrica e ingeniería mecánica, así como conocer el rol de tareas previas en función de tareas principales, esto en un curso en línea con fines específicos (ESP) . Esta investigación se encuentra dividida en cuatro secciones. En el primer capítulo, se presenta un detallado análisis de necesidades incluyendo carencias, pretensiones e insuficiencias comunicativas reportadas por la población meta. En el segundo capítulo, se detalla un programa de estudios basado en el enfoque de enseñanza por tareas. En el capítulo tres, se brinda una descripción de los procedimientos e instrumentos de evaluación. Finalmente, en el capítulo cuatro, las investigadoras e investigador se refieren al reporte de evaluación del curso, en el cual se establecen relaciones entre tareas previas y el desempeño de estudiantes en tareas principales, basados en el uso de vocabulario meta y la percepción de los estudiantes. Los resultados de esta investigación no son definitivos, pero ofrecen implicaciones importantes que podrían ser útiles para futuros estudios en las áreas de inglés para fines específicos, enfoque de enseñanza por tareas, y el aprendizaje en entornos virtuales.

*Palabras clave:* Inglés para fines Específicos, enfoque de enseñanza por tareas, aprendizaje en entornos virtuales, rol de tareas previas, vocabulario meta, diseño de programa

**Abstract**

As professionals demand more specialized language learning experiences, English for Specific Purposes (ESP) courses have become more relevant. In Costa Rica, the English language has been a cornerstone for economic development, and the growing need for more specific curriculums has been addressed by the University of Costa Rica (UCR) in the Master's Program in Teaching English as a Foreign Language. This study aimed at analyzing the needs of electrical and mechanical engineering students from UCR and investigated the role of pre-tasks in main task performance in an online ESP course for those individuals. This paper is divided into four sections. In the first chapter, a thorough needs analysis is presented, including the needs, wants, and lacks reported by the target ESP population. In the second chapter, a syllabus following the Task Based Language Teaching approach (TBLT) is described. In chapter three, a description of the assessment procedures and instruments is provided. Finally, in the fourth chapter, the researchers refer to the course evaluation report, in which connections between pre-task stages and main task performance are established based on target lexical item use and the students' perceptions. The findings in this study are not conclusive but offer important implications that could be useful for future research in ESP, TBLT, and online learning.

*Key words:* English for Specific Purposes, Task-Based Language Teaching, online learning, role of pre-tasks, Target Lexical Items, syllabus design

**Lista de tablas**

## Lista de Figuras

**Lista de abreviaturas**

**ACTFL:** American Council on the Teaching of Foreign Languages

**EE:** Electrical engineering students

**EFL:** English as a Foreign Language

**ESP:** English for Specific Purposes

**ME:** Mechanical engineering students

**TBLT:** Task-Based Language Teaching

**TEFL:** Teaching English as a Foreign Language

**TLI:** Target lexical items

**TLI-S:** Target lexical items used by students

**UCR:** University of Costa Rica

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## Chapter I: Needs Analysis

The Master's in Teaching English as a Foreign Language (TEFL) is a graduate program of the University of Costa Rica (UCR) that intends to shape its students into teachers of the highest level, capable of carrying out their duties independently or interdependently in a critical, creative, and ethical way. In order to successfully graduate from the program, students must design an English for Specific Purposes (ESP) course aimed at helping a specific professional or academic population improve their English skills in their field. If the course design is satisfactorily completed, the students teach their previously-designed course as part of a 14-week teaching practicum.

The following paper constitutes the culmination of the course design and practicum process for three graduate students of the Master's in TEFL at the University of Costa Rica, who received the population of mechanical and electrical engineering students from the same public university. The paper consists of four distinct yet interconnected chapters. To begin, the needs analysis process, including the data procedures, approach, and key findings, is explained in this chapter. From the information gathered throughout the needs analysis, unit goals and objectives were developed, and an overview of contents for each of the three general objectives was created. These aspects are found in Chapter 2. Using the goals and objectives as a guide, lesson plan samples and sample materials were designed, found in Chapter 3, along with three assessments for evaluating student performance, student-teacher performance, and course effectiveness. The effectiveness of the course was then evaluated formally, guided by one main

research question and two sub-research questions to evaluate the role of pre-tasks on main task performance based on target lexical item use and students' perspectives. This evaluation of course effectiveness is found in Chapter 4.

This online ESP course for electrical and mechanical engineering students was created to aid the students in their current academic studies and future workplace settings by providing them with the tools, skills, and knowledge they need to flourish. In brief, it is the hope of the researcher-instructors that the work completed has benefitted the populations surveyed and that the findings gathered will contribute positively to future teachers and researchers.

**Description of the Participants' Field Work and Tasks**

The world of engineering is surrounded by innovation and creativity. Since the beginning of life, humans have adapted to their environment by creating tools, either to solve issues or improve ways of living. These creative solutions led to the development of what we know today as engineering. According to the National Academy of Engineering (2020), this discipline "emerged during the 1500's when specialists began using mathematics to design military fortifications." In time, different branches of engineering emerged as engineers started dividing their procedures and processes into various fields. Today, an engineer's focus is to "develop understanding of technological matters and a well-grounded sense of social responsibility" (Sheppard, Pellegrino, and Olds, 2008, p.231). In addition, they are considered the best equipped professionals to "struggle with the complexity of consequences of technological interventions in our own reality" (p.

231). This view is maintained among students who consider engineers to be technicians and laborers in charge of “fixing, building, or making and using vehicles, engines, and tools” (Capobianco et al., 2011, p.304).

In addition to designing, creating, assessing, and fixing, both mechanical and electrical engineers must communicate effectively in English (Evans et al., 2020). First, they need to communicate clearly with companies and manufacturers in order to negotiate contracts, obtain supplies, and facilitate purchases (Rezaee & Kazempourian, 2017, p. 13). These interactions often require understanding emails and responding politely with an appropriate level of formality. Engineers may also communicate via phone or virtual media; in that case, listening and speaking skills are of the utmost importance. Whichever the medium, engineers must ask for and give clarification to avoid misunderstanding, use honorifics to show respect, structure an email or phone call effectively, and describe the advantages of a product, among other microskills.

Engineers also need English for training workshops or international conferences (Rezaee & Kazempourian, 2017, p. 13; Rus, 2019, p. 323). As an audience member, an engineer needs to identify main and supporting ideas and ask questions politely. As a presenter, they must employ signposting, refer to graphs and charts, and utilize a variety of verb tenses and aspects. Lastly, the engineer may want to establish connections with other attendants, in which case small talk skills are of great importance.

English proves especially necessary when engineers must produce and/or translate technical reports, manuals, and research articles (Rezaee &

Kazempourian, 2017). These documents provide the media through which engineers communicate with companies/supervisors, the general public, and experts, respectively. Consequently, engineers need to appropriately apply technical vocabulary in English and utilize specific writing skills (such as employing connectors, eliminating wordiness, and organizing their writing clearly) in order to communicate effectively in written form with their various audiences.

In the Costa Rican context, professional opportunities in the fields of Mechanical and Electrical engineering seem to be growing exponentially. In the former, aerospace and medical design industries have shown increasing demand for engineers in recent years (Fundación Omar Dengo, 2013, 2:50). In the latter, areas such as environmental conservation, security, communication, and medicine applications have shown rising interest (School of Electrical Engineering, UCR). All these developing opportunities call for an expanding job market that, due to globalization, requires strong communication skills in English. Considering the complexity of the fields, the design of an ESP course must contemplate a series of linguistic and subject-related variables that influence the acquisition of specific and tailored communicative competences. Thus, the design and implementation of a needs analysis becomes of great relevance to design an ESP course that complies with demands of target population: Electrical and Mechanical engineering students from a public university in Costa Rica. To this end, this study aims at collecting and interpreting key data from the participants, stakeholders, and specialists to determine the most crucial communicative needs in both academic and work-related contexts.

## Methodology

### *Research Approach*

Collecting data for a future ESP (English for Specific Purposes) course that accounts for a large target population, such as the one in this study, generally demands both qualitative and quantitative data analysis. The need to design a comprehensive needs analysis that comprises both quantitative data, which helps create a scenario of priorities--and qualitative data, which aids in deeply understanding the learners' background--is most likely undeniable. Therefore, the best option for the research design seemed to be a mixed-methods study, defined by Creswell et al. (2003) as "the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research" (p. 165). This should allow the course designers to integrate necessary features of qualitative and quantitative research. On this respect, Riazi and Candli (2014) describe sequentially designed studies as those in which "either quantitative or qualitative data are collected first, followed by the collection of the other type of data at a later second stage, with the two seen as mutually dependent," while concurrent designs are defined as those involving "collecting both quantitative and qualitative data concurrently and independently" (p.146). To suit the contextual conditions of the needs analysis, namely the most urgent linguistic skills in engineering students, a mixed methods approach involving sequential and concurrent designs was adopted.

As part of this mixed methods study, both qualitative and quantitative data were collected simultaneously in three different instruments containing a variety of questions for stakeholders (see Appendix A), informants (see Appendix B), and students (see Appendix D). These instruments included multiple choice, ranking, short-answer, and open-ended questions, which provided valuable information that that was then interpreted and triangulated using analysis techniques of the mixed-methods approach.

Triangulation, a key feature of the mixed methods approach, contributes greatly to the validation of the data analysis as it “strengthens and enriches a study’s conclusions, making them more acceptable to advocates of both qualitative and quantitative methods” (Pardede, 2018, p. 233). The needs analysis instruments were concurrently designed in a way that one source would allow the course designers to confirm, discard, expand or clarify information from the other. Yet, the most relevant data coded and analyzed from these questionnaires also could serve the purpose of nourishing a future instrument, namely, interviews that could take place with students and stakeholders. Thus, this design also proves to be sequential, as primary results from initial instruments could become the basis for the creation of a subsequent instrument.

The main goal of this needs analysis is to gather the most comprehensive data from the target population and interpret it accurately in order to design the most effective tailor-made ESP course considering learners' needs, wants, and lacks. To achieve this, sound evidence is a must. Following the rationale behind the mixed methods approach principles, the design of this needs analysis took

shape by creating instruments to address three target populations that would inform each other.

### *Participants*

With the purpose of gathering information for this project, a total of 215 applicants were contacted. Out of the original 215 applicants, 117 responded to the survey corresponding to Appendix D. This survey was designed with the objective of obtaining their contact information and confirming their interest in the course. In addition, participants were asked to provide information regarding informants that would like to cooperate on the project. After that, a second survey was created (see Appendix D) to obtain the specific information for the needs analysis. In this case, 122 participants agreed to provide information in terms of their interests within the major, language skills, and learning needs and wants. Based on the responses from the participants on the study in terms of permanence on the program, the general age range is from 17 to 26 years old. In addition, out of 122 students, 69 of them reported having attended English classes before and 15 communicated that they are currently working as engineers. Due to the large number of applicants interested in the course, the 25 students that are on the third year of the program will be selected to participate on the course.

In addition, two specialist informants were consulted. The first is a former graduate of the University of Costa Rica in the major of mechanical engineering. He works designing innovative medical devices for patients who need procedures related to endoscopies, urology, and cardiac interventions. The second specialist

informant is also a graduate from this institution as an electrical engineer. He founded his own company seven years ago. This company specializes in energy saving systems for institutions such as hospitals, correctional facilities, and others.

As a final step, stakeholders from the schools of Electrical and Mechanical Engineering were asked to provide relevant information about their students' current needs. Five respondents, including college professors and directors, provided valuable data concerning engineering students' language needs both in the academic and work field. Participants added insights on the types and frequency of English exposure in spoken and written form.

### *Instruments*

For the purpose of this study, two questionnaires were applied to participants. The first questionnaire (see Appendix C) gathered data regarding contact information. In this instrument, close-ended questions were added to learn about their majors and their willingness to receive further information related to the course. The second questionnaire (see Appendix D) is composed of 3 segments. The first segment requests further contact information and professional interests in terms of the areas of expertise they would like to specialize on. The second segment focuses on language, the difficulty level of various skills, and the frequency in which English is used in their major. The third segment gathered information regarding their learning styles, classroom preferences, and attitudes towards English learning.

Moreover, a third questionnaire was also implemented for specialist informants (see Appendix B). The purpose of this questionnaire is to collect data related to the specific English needs that engineering students may encounter during their career. Aspects such as the hiring process, written texts, communication skills, and professional development were included in this instrument. Finally, an instrument for stakeholders was also designed (see Appendix A). This instrument focused on the academic and work needs learners have based on the professional experience from the stakeholders in the use of the English language.

## *Procedures*

The main communication channel used to gather information was via email. In addition, all questionnaires, including stakeholders and informants, were shared using Google Forms. These questionnaires were estimated to last no longer than 15 minutes each.

## *Group Profile*

### Educational Background

The information obtained was gathered from a group of 122 students from the University of Costa Rica (UCR). 94 students are part of the electrical engineering population and 29 are mechanical engineering students. The great majority of students (25) have studied engineering for the past three years. Other participants have been in the major for two years (21), four years (22), five years

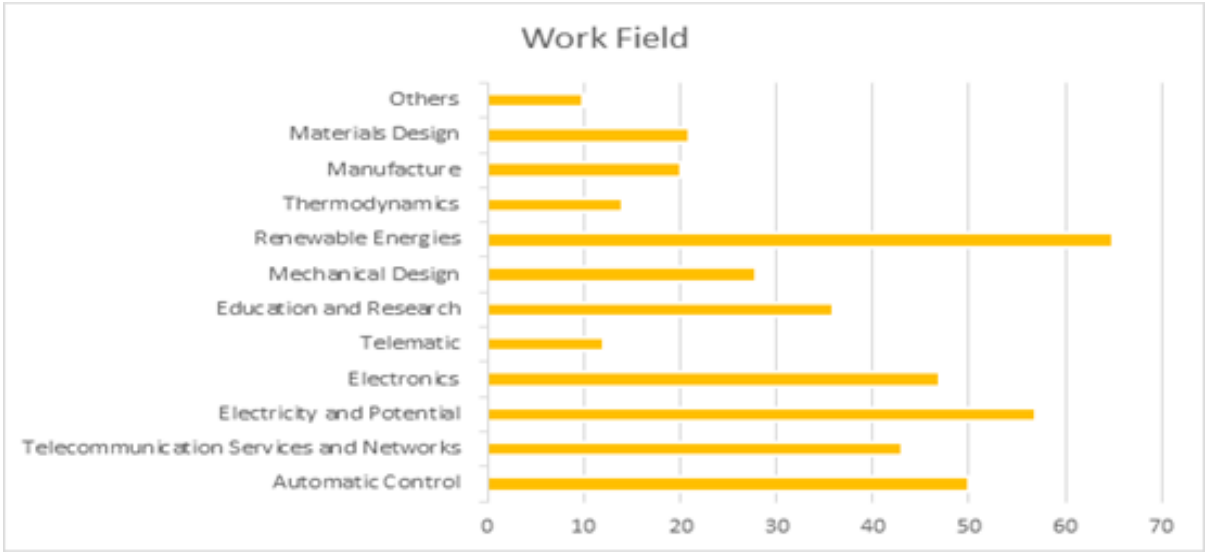
(19), six years (6), and seven years (4). In addition, one student has been part of this field for 8 years and another one for twelve.

Based on the responses given, 15 students out of the total of 122 are currently working as engineers. Their main roles are project coordination, energy efficiency, development of tests to measure product effectiveness, and electric design. Moreover, these students are in charge of planning different workshops for the employees, servicing clients, and establishing the budget for different projects.

Additionally, students were asked the work field they would like to be part of in the future. As illustrated in Figure 1, the areas in which students are more interested in are renewable energies (65), automatic control (50), and telecommunication services and networks (43). Moreover, students mentioned other fields that were not proposed in the initial survey. Some of them are neuroscience, aeronautics, biomedicine, and computer hardware.

**Figure 1**

***Work fields that students would like to work in in the future***



## Results & Discussion

### *Language Needs, Lacks, and Wants*

#### Specialist informants survey: Workplace needs

Two informants were contacted to evaluate the possible professional needs of the student (please see Appendix B for further information). Within their area of expertise, one as a mechanical engineer and the other as an electrical engineer, both informants agreed that English is present from the very beginning of the selection process, at least in their corresponding companies. The curriculum vitae, the application form, and different tests are requested in English. In addition, the job interviews on both companies are conducted in English to evaluate not only the applicants´ qualifications to perform the job but also their proficiency and their communicative capabilities in the language.

In terms of writing needs, workers use emails as one of their principal channels of communication. Even if these emails are delivered locally, English is used since most of the time non-native Spanish speakers are included in the communication. These emails are written with the purpose of informing the rest of the team of the decisions made and the actions that need to be completed in the near future to successfully conclude the assigned projects. Hence, knowing that most of the technological equipment is produced by US American companies, their sales and the technical support communication via email is provided in this language. In addition, writing skills are also needed for the creation of materials for project proposals.

Reading skills are applied in the informants' everyday job-related tasks since technical protocols, operation manuals, and technical reports of their machinery are written in English. Out of those, the most frequently used are manuals and protocol reports.

With respect to speaking and listening competence, informants declared that delivering oral presentations is one of their main tasks. Most of the times, these presentations are carried out in virtual settings such as videoconferences since engineers are meant to provide project updates, debate the results obtained, and analyze data. Moreover, engineers deliver educational workshops to train employees from the different departments in relation to the characteristics of the projects.

For their professional growth, both informants attend conferences and seminars to receive research updates and to build professional network. As part of the seminars, engineers design small projects and complete tasks in order to evaluate their performance. Additionally, they constantly read new research to keep themselves updated on new procedures and technologies to evaluate processes and work on continuous improvement projects.

**Stakeholders survey: Academic and Professional Needs**

In terms of academic needs, all five stakeholders indicated that communicating orally with experts is a high-priority skill for engineering students. Three additional skills were identified as high priority by 80% of stakeholders: understanding talks/lectures, reading manuals, and understanding academic articles. Project presentations, academic report writing, and email writing were not

indicated by any of the stakeholders as high-priority academic skills, and only one respondent indicated giving proposal presentations as high priority for the academic setting.

When asked to indicate high-priority skills for the workplace, 100% of respondents chose communicating orally with experts. Effectively, all five respondents indicated this skill as high priority for both the academic and professional setting. This finding prompts more than one question. First, what did stakeholders understand this oral communication to entail: small talk at a conference, polite indirect questions at a talk, phone interviews to gather data for research? Then, who are these experts: engineering colleagues, published engineers, university professors? Further investigation, perhaps in the form of follow-up interviews or consultations with other engineers and/or relevant literature, needs to be done to obtain this information.

Another high-priority professional skill, indicated by 80% of stakeholders, was reading manuals. This finding is consistent with what specialist informants reported: manuals are one of the most frequently-read text types in their workplaces. The majority of stakeholders (80%) also indicated proposal presentations as a high-priority skill, while only 40% indicated project presentations. This distinction is important to consider, as the type of presentation (project vs. proposal) may affect the content, purpose, and linguistic aspects an instructor chooses to teach. With respect to email writing, 60% of stakeholders declared it a high-priority skill and specified that this communication would occur mostly between engineers, supervisors, and clients. This finding supports

specialist informants' identification of email as a key channel of communication. Lastly, 60% of stakeholders also selected understanding talks/lectures as a high-priority skill for engineering professionals. One stakeholder specified in an open-ended question that attending conferences, seminars, and workshops would be important for the population; this supports specialist informants, who stated that workshops and seminars are common events they attend where English is used.

Concerning the use of English in the hiring process, all five respondents indicated that English is indeed necessary for job interviews, consistent with data from the specialist informants. Three stakeholders indicated that English is also used for cover letters, job applications, and resumes. It seems that while job interviews are likely to be conducted in English, other English requirements (a language test, resume, cover letter, job application) might vary on a company-to-company basis. For this point, a larger sample size of stakeholders could likely yield more generalizable conclusions.

Overall, the present results from the stakeholder and specialist informant surveys highlight the following workplace needs for engineers: reading manuals, communicating orally with experts, presenting proposals, writing emails, and understanding talks/lectures. The data from both groups of respondents also indicate that at least part of the hiring process is likely to be implemented in English. In terms of academic needs, four were emphasized by stakeholders: communicating orally with experts, reading manuals, understanding academic articles, and understanding talks/lectures. In order to triangulate these findings, the

professional and academic needs reported here will be discussed further in combination with the student survey results.

**Student survey: Language lacks, needs, and wants**

Students rated 14 engineering-related language skills on a scale from one (least difficult) to four (most difficult), an item designed to gather students' perceptions of challenging tasks in English. For the purposes of this analysis, the most challenging skills will be understood as those for which at least 70% of students indicated either a 3 or 4 for level of difficulty. Table 1 summarizes the most challenging skills according to the survey.

**Table 1**
***Percentage of respondents rating skills as challenging***

| Skill | Respondents |
|---|---|
| Giving oral presentations in a work setting | 86% |
| Maintaining a formal conversation about my field | 79.5% |
| Giving oral presentations in an academic setting | 77.8% |
| Writing an academic article | 77% |
| Using engineering vocabulary | 74.6% |
| Writing a technical report | 71% |
| Orally summarizing an idea of an engineering expert | 70.5% |

As shown by the data, of the 14 skills listed, giving presentations and maintaining formal conversations are the most difficult for the majority of the group. This is a crucial piece of information given the data gathered from specialist informants and

stakeholders: giving presentations is a key task in the workplace, and communicating orally with experts is a high-priority skill in both academic and professional settings. Additionally, if students intend to participate in seminars, workshops, or conferences (three events that both specialist informants attend), formal conversations about engineering will likely occur. These conversations might be part of what stakeholders identified as communicating orally with experts, though as mentioned previously, more research is needed. In terms of specific indications as to which aspects of presentations and formal conversations students find challenging, one could argue that students indicated using engineering vocabulary and orally summarizing an idea as highly challenging, which are two components of oral presentations and may also be skills required for formal conversations about the field. However, further investigation must be done in order to ascertain specific details.

When students were asked which three skills (of the 14) they would like an English course to focus on, 52.5% mentioned giving oral presentations, and 51.6% indicated maintaining a formal conversation about engineering. More than a third of respondents also indicated using engineering vocabulary (35.2%), and roughly a quarter chose writing a technical report (25.4%). Three of these four skills match the most challenging tasks that students indicated in the language section of the survey, among them, giving oral presentations, maintaining a formal conversation, and using engineering vocabulary.

To determine task frequency, students indicated how frequently they read five typical engineering text types in English in their engineering courses: manuals,

technical reports, emails, academic articles, and abstracts. Table 2 illustrates the frequency with which the student sample reads these five text types over the course of their engineering program.

**Table 2**
***Percentage of respondents indicating frequency of reading five text types***

| Text type | Frequency | | | |
|---|---|---|---|---|
| | Never | Infrequently | Frequently | Almost always |
| Manuals | 8.2% | 35.2% | 43.44% | 13.1% |
| Technical reports | 13.1% | 30.3% | 45% | 11.5% |
| Emails | 30.3% | 45.9% | 18.9% | 4.9% |
| Academic articles | 4% | 27.9% | 50% | 18% |
| Abstracts | 5.6% | 17.2% | 54% | 23% |

As the data show, the most frequently-read document is abstracts: 77% of respondents indicated that they read them almost always (23%) or frequently (54%). Half of respondents replied that they frequently read academic articles, and nearly half indicated that they frequently read technical reports and manuals. Emails are the least frequently read of the five texts; 76.2% of respondents reported that they never (30.3%) or infrequently (45.9%) read them in English in their courses.

While many of the students read at least four of the text types in the survey in English, they rarely, or never, write them. Table 3 shows the frequency with

which respondents write five text types in English over the course of their engineering program.

**Table 3**

***Percentage of participants indicating writing task frequency of five text types***

| Text type | Frequency | | | |
|---|---|---|---|---|
| | Never | Infrequently | Frequently | Almost always |
| Manuals | 59% | 33.6% | 6.6% | 0.8% |
| Technical reports | 51.6% | 38.5% | 6.6% | 3.2% |
| Emails | 55.7% | 35.2% | 8.1% | 0.8% |
| Academic articles | 51.6% | 38.5% | 7.3% | 2.4% |
| Abstracts | 45% | 36.9% | 13.1% | 4.9% |

At the low end of the frequency spectrum, 92.6% of students indicated that they never or infrequently write manuals in English in their engineering courses (59% and 33.6% respectively). 90.1% of respondents indicated never or infrequently writing technical reports (51.6% and 38.5% respectively). 90.9% of respondents indicated never or infrequently writing emails (55.7% and 45.2% respectively). Lastly, 81.9% of students indicated never (45%) or infrequently (36.9%) writing abstracts. According to these findings, writing skills for the five text types included in the survey are not an academic need for the students in this population.

Given the results from the specialist informant and stakeholder questionnaires, in addition to the results on reading frequency, the students are more likely to read the text types from this survey than to write them. The only exception is email writing. Specialist informants signaled that emails are a key

channel of communication, a statement supported by 60% of stakeholders. Although email writing is infrequent in the academic setting, it is a frequent and high-priority task in the workplace. With respect to reading skills, students have not interacted with the five text types in the same way that they will need to in their future workplaces. Even though roughly half of the population reported reading manuals and/or technical reports in classes, the purposes for reading those text types in courses could vary greatly from the reasons for reading them in the professional setting. In brief, the data on task frequency, when analyzed in light of the findings from the specialist informant and stakeholder surveys, reflect a need for reading skills, specifically for manuals, technical reports, and academic articles, as well as a need for reading and writing emails.

On another note, the results obtained on task frequency seem to contradict the results on skill difficulty in the case of writing manuals and emails. Neither email writing nor manual writing were identified as one of the most challenging skills from question six, yet, according to their responses, students almost never produce these two text types in English in their engineering courses. One could posit that students did not rate these skills as challenging due to a lack of experience performing the skills. In essence, perhaps they did not find these tasks to be difficult because they have never done them before.

In addition to the data on text types, students indicated the frequency with which they carry out selected oral and auditory activities in English in their engineering courses. A relatively high frequency was indicated for watching videos related to the mechanical or electrical branch of engineering (74% of respondents).

The lowest frequency was reported for two activities: following an engineering class taught in English, by 89% of respondents, and giving presentations about topics related to the engineering major, by 84%. Perhaps the most salient piece of data here is the last; the importance of giving presentations in the professional setting was emphasized by specialist informants and stakeholders, but a very high percentage of students report not having to do presentations in their courses. Furthermore, slightly more than half of the student population indicated that they would like to learn how to give presentations in English, and 86% of the students identified giving presentations in the workplace as a high-difficulty skill. Although giving presentations may not be an academic need, the results stated previously support that giving presentations *in the workplace* is a need, want, and possibly lack for this population.

When asked about their preference regarding a course focused on current vs. delayed needs, the majority of students (68.8%) indicated that they prefer a course focused on both. More than a fourth (27.9%) expressed interest in focusing solely on professional needs, while almost no students (3.3%) preferred a course focused only on academic needs. Data from specialist informants and stakeholders support the design of an ESP engineering course focused both on immediate and delayed needs. More specifically, the data from the three populations (specialist informants, stakeholders, and students) suggest the following target-needs to satisfy through the ESP course: reading and writing emails, giving presentations (specifically presenting proposals), maintaining formal

conversations about engineering topics, reading manuals, and understanding talks/lectures.

Of the 122 students, 43 responded to an optional question regarding topic(s) from their major that they would like integrated into the English course. The topics students referred to would be understood as possible sources of carrier content, not real content; that is to say, the focus during the course would be on the language involved in the engineering material, not the teaching of the material in and of itself. The following topics were the most frequently mentioned among the 43 respondents: design (23.3%): electrical, mechanical, computational; circuits/circuit analysis (16.3%); systems (14%): systems analysis, systems control, air conditioning systems, sewage systems, embedded systems; electronics (14%). At first glance, these data seem to provide indications of possible carrier content for the course. However, these responses were supplied by a minority of the population (roughly a third), and the percentages thus diminish greatly when calculated for the total 122 respondents. In the end, when choosing engineering topics and materials for the course, more information must be considered, especially given that a salient topic for electrical engineering could be highly irrelevant for mechanical engineering, and vice versa. In the event that carrier content is not relevant to both areas, separate carrier content should be used; in these cases, the real content in both sets of materials will be the same.

### *Students' Learning Strategies and Attitudes*

#### Learning styles and strategies

In order to determine students' learning styles, a number of scenarios were carefully designed and described in the form of questions. For each scenario, participants were allowed to choose freely from four possible alternatives that represented the four learning styles proposed by the VARK model (Fleming & Baume, 2006): visual, auditory, reading and writing, and kinesthetic. Selecting more than one option was acceptable. The alternatives were provided randomly to prevent students from fixating on one particular style or finding a pattern to follow in the questionnaire. Furthermore, considering that learners were able to choose more than one option, an additional step was necessary to analyze and interpret the data. A value of 4 was assigned to each learning-style alternative with the highest choice rate. The same procedure was followed with the second, third, and fourth highest choice rate was followed by assigning values of 3, 2 and 1. Eventually, the number values assigned to each learning style based on the results were added to obtain a score representing the most influential learning styles in this population.

**Table 4**

***Assigned value to each learning style based on students' responses***

| Learning Style | Q13 | Q14 | Q15 | Q16 | Q17 | Total |
|---|---|---|---|---|---|---|
| Kinesthetic | V:3 | V:3 | V:4 | V:3 | V:4 | V: 17 |
| Auditory | V:4 | V:2 | V:3 | V:4 | V:3 | V: 16 |
| Writing/Reading | V:2 | V:4 | V:2 | V:2 | V:2 | V: 12 |
| Visual | V:1 | V:1 | V:1 | V:1 | V:1 | V: 5 |

**Q** = Question **V** = Value

The results in the learning styles section of the questionnaire were undisputable. The participants demonstrated a strong tendency in favor of auditory and kinesthetic learning styles. The addition of the values given by learners resulted in 17 points (85%) for the kinesthetic learning style, 16 points (80%) for auditory, 12 (60%) points for reading/writing, and 5 points (25%) for visual. These percentages indicate the degree of probability for the target population to opt for alternatives typical of the VARK learning styles model. Thus, the engineering students who participated in the questionnaire have a tendency to choose kinesthetic and visual learning style strategies as their first and second options when performing a variety of tasks. When interpreting these results, an important caveat must be born in mind. The fact that both reading/writing and visual learning styles reported lesser values does not mean that students do not resort to these strategies. The point to be made here is that these are not their primary options when performing engineering-related tasks.

### *Students' attitudes towards learning*

As part of this segment of the needs analysis, participants were asked to answer questions that provided input on their expectations of teacher's desirable traits, classroom preferences, and past experiences while learning English. In addition, they were asked to describe their weaknesses and strengths as students. The results are described below in each of the corresponding categories.

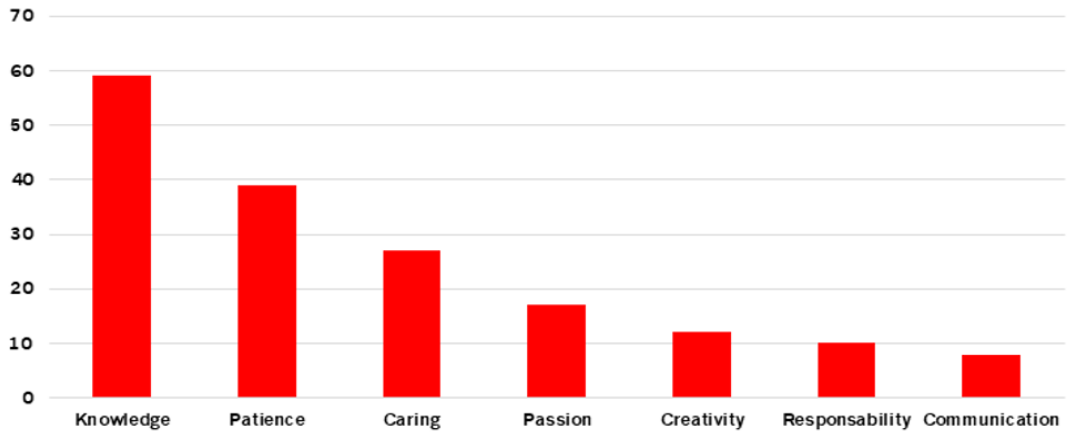
#### Teachers' Desirable Traits

Data was collected from the questionnaire regarding students' perception of desired qualities in a teacher. Considering the qualitative nature of the information,

the responses were coded into seven main categories: knowledge, patience, passion, creativity, responsibility, and communication skills. Knowledge, in particular, was subdivided into instructional-related aptitude and language-related aptitude to differentiate comments that related to a teacher's ability to come up with effective classroom practices from those that implied an instructor's knowledge of the language. The interpretation of these results should be read carefully considering that most responses provided input for more than one category. Thus, participants often mentioned a variety of traits that, in their opinion, were desirable in a teacher. To analyze such data quantitatively, the number of times that each category was mentioned was added in order to determine its importance. Figure 2 summarizes these results.

**Figure 2**

***Ranking of most valued teacher traits among engineering students***




Unquestionably, knowledge was the most valued trait considered by the target population. Out of 122 replies, 59 (47.9%) indicated a noteworthy preference toward teachers being knowledgeable. As mentioned before, knowledge was

separated into two additional categories that classified comments related to the teacher's expertise in terms of pedagogic aptitude or linguistic knowledge. Out of 59 knowledge-related responses, 53 replies concerned the instructor's pedagogic knowledge to deal with a variety of scenarios. Among the most frequent comments, participants emphasized the teacher's talent to catch and maintain the students' attention, the competence to offer meaningful explanations, and the qualification to answer all types of questions when necessary. The other seven responses addressed the teacher's knowledge of the language.

In addition to knowledge, participants showed great appreciation for a teacher who is patient (31.7 %), caring (21.9 %), and passionate (13.8 %). Participants explicitly used the adjective, patient, or noun, patience, a significant number of times. In the following category, they did not use the word caring explicitly, but all of the comments that referred to a teacher's genuine empathy, tolerance and respect were grouped in this category. Finally, some participants specifically alluded to the instructor's passion for their work, while others described the teachers' vocation and love for their practice. These features were included into the "passionate" category.

**Students' Weaknesses and Strengths**

In terms of learning strengths, the data collected was qualitatively classified into five dominant categories: a) perseverance, b) cognitive ability, c) responsibility, d) study skills, and e) learning enthusiasm. It must be clarified that, out of the 122 replies, five responses were discarded because they were either left blank or provided irrelevant information. The most recurrent strengths in the target

population were perseverance (34.1%) and cognitive ability (33.1%). Perseverance included all of those responses that described the learner's determination, hard work, and resilience when facing adversity, while cognitive ability was subdivided into two further categories: learner's rate (b1) and memory capacity (b2). The former was interpreted as the learner's ability to learn fast. The latter was understood as the student's retention capability. Out of the two, learner rate had the highest recurrence (29 out of 39 cognitive-related responses). Other important strengths were study skills (18%), which incorporated replies implying the student's effective use of study strategies, including organization, teamwork and creativity, responsibility (17%), which explored the comments that showed the learner's degree of commitment, and learning enthusiasm (8%), which dealt with students' answers that denoted an intrinsic excitement or enjoyment in learning. The results are summarized in Table 5.

**Table 5**

***Ranking of students' reported strengths***

| ***Categories*** | ***Results*** |
|---|---|
| *Perseverance* | *40 / 117 (34.1%)* |
| *Cognitive Ability* | *Total: 39 / 117 (33.3%)*<br>*Learning Rate: 29 / 39*<br>*Memory Capacity: 10 / 39* |
| *Responsibility* | *20 / 117 (17%)* |
| *Study skills* | *22 / 117 (18.8%)* |
| *Learning Enthusiasm* | *10 / 117 (8%)* |

Concerning the participants' weaknesses, the responses were coded into five predominant categories: i) inattentiveness, ii) procrastination, iii) cognitive limitations, iv) shyness, and v) time management. The most relevant weakness reported, inattentiveness, encompassed all statements that denoted the learner's lack of focus and limited attention span. Although with a significant difference from the first category, time management and cognitive limitations were the second and third most relevant weaknesses. The former depicted responses describing the learners' difficulties to organize their time to cope with their responsibilities. The latter comprises statements alluding to various degrees of cognitive processing, including poor memory capacity, lack of understanding in ordinary learning scenarios, and need for additional pedagogical help. Other weaknesses reported by the target population concerned procrastination, assumed as the strong tendency learners have to delay academic obligations, and shyness (5.1%), understood as the difficulty to interact with peers or the instructor as well as to speak in public. Table 6 illustrates the previous results.

**Table 6**

***Ranking of students' reported weaknesses***

| **Categories** | **Results** |
|---|---|
| Inattentiveness | 45 / 117 (38.4%) |
| Time Management | 12 / 117 (10.2%) |

| | |
|---|---|
| Cognitive Limitations | 11 / 117 (9.4%) |
| Procrastination | 7 / 117 (5.9%) |
| Shyness | 6 / 117 (5.1%) |

**Students' Preferences**

To determine the participants' expectations of classroom interaction, three main components were addressed: (1) grouping strategies, (2) class activities, and (3) didactic materials. For the first component, students were asked to choose the most effective grouping strategy for learning purposes; the vast majority (62/122) opted for the alternative that incorporated all types of classroom practice: individual, pair, and group work. The rest of the group favored pair work (28/122) and individual work (21/122) in similar percentages, leaving only group work (11/122) as the least preferred option (See Figure 3.1). The second component dealt with in-class activities that learners considered to be the most motivational, with the possibility of choosing more than one option. The results showed a dominant tendency towards problem-resolution (78/122) activities, followed very closely by text analysis (71/122), and discussions related to innovation (69/122). Other activities that also showed a significant preference were oral presentations (65/122), writing tasks (62/122), online research (49/122) and demonstrations (44/122) (see Figure 3.2).

Finally, regarding teaching materials, learners were asked to rank five types of materials based on their perception of how important they were to increase learning opportunities. A strong inclination for practice and exercises (63/122) far exceeded the remaining four types of materials. Both illustrated material and videos showed the exact same relevance for students (38/122) while short readings (30/122) and podcasts (25/122), although meaningful to a significant part of the population, did not prove to be essential to the majority (see Figure 3.3). All of these results correlate closely with the data from the learning styles segment. A likely explanation is that Engineering students are, for the most part, kinesthetic and auditory learners with a marked flexibility for teamwork and fond of the practicality and analysis of problem-resolution activities. In addition, the participants show a remarkable preference for exercises as their number one option to increase learning opportunities, which can be linked with the kinesthetic learning style. Yet, the few responses in favor of podcasts in contrast with higher numbers for videos and illustrated materials differ from the low numbers for the visual learning style. Such a discrepancy could be explained in terms of the scarce use of podcasts in classrooms compared to the much more traditional audiovisual materials.

**Figure 3.1**
***Students' grouping preferences***

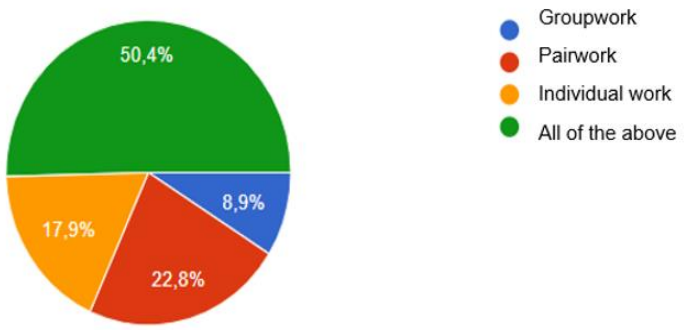



**Figure No.3.2**
***Students' preferred materials***

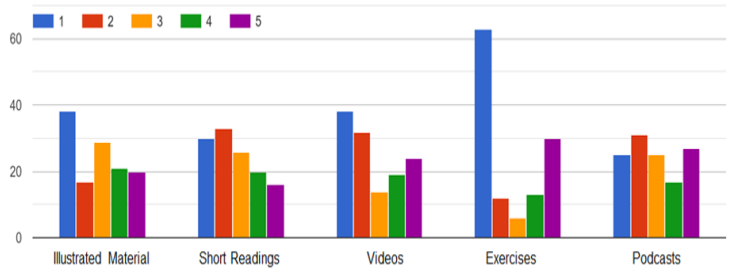
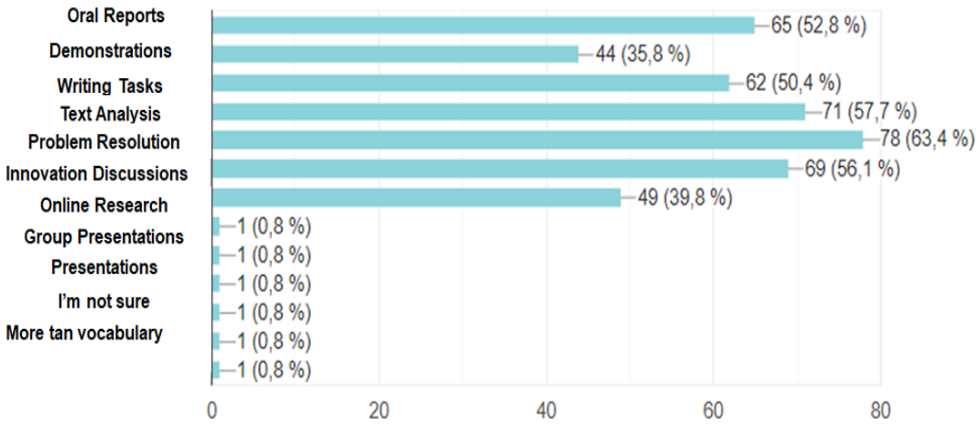



**Figure *3.3***
***Students' preferences for class activities***



### Students' Attitudes towards English

To determine attitudes towards English learning, participants responded to questions about their prior participation in English courses. Of 122 students, 69 (56.5%) reported having attended English classes before. It must be clarified that the participants were not entirely consistent reporting their past participation in an English course. Some reported no participation but still rated their experience. Thus, it has been concluded that, based on their ratings, they had attended English classes before. Therefore, the participation rate should be 88% instead of 56.5%. When referring to their experiences, the results were fairly even with a small tendency in favor of positive episodes. Learners who reported a negative experience rated their English classes as frustrating (16.3%) or tedious (21.1%), while those with pleasant experiences described their classes as either interesting (26.8%) or motivating (22%). When asked about the rationale behind their responses, learners reported a number of reasons. When reading these results, however, it should be born in mind that several responses (42) to this question were discarded because of ambiguity or irrelevance. Thus, the following statistics contemplate only 80 responses instead of 122.

Responses that conveyed positive experiences (43/80) were coded into four categories: a) effective learning, b) intrinsic motivation, c) learning beyond the classroom, and d) teacher-related factors. Effective learning (12/43) included comments that touched on students' sense of learning something effectively, however small. Intrinsic motivation (11/43) dealt with answers in which learners express their personal preference for the language or intrinsic willingness to enjoy

it. Learning beyond the classroom (9/43) enclosed responses in which the participants explained how their English lessons went beyond reviewing forms and theory; instead, they learned about cultures and other themes. Finally, teacher-related factors (6/43) were concerned with those reactions that made instructors accountable for a positive experience, either because they were engaging, committed, creative, or inspirational. These results suggest that for the target population, a sense of accomplishment is crucial to keeping themselves motivated. Table 7 summarizes the students' explanations of their positive attitude towards learning English.

**Table 7**

***Students' rationale for rating prior English classes as positive experiences***

| ***Categories*** | ***Positive Experiences: 43 / 80*** |
|---|---|
| *Effective learning* | *12 /43 (27.9 %)* |
| *Intrinsic Motivation* | *11 / 43 (25.5 %)* |
| *Learning beyond the classroom* | *9 / 43 (20.9 %)* |
| *Teacher-related factors* | *6 / 43 (13.9%)* |

Responses that revealed negative experiences were coded into four categories: 1) teacher-related factors, 2) content-related aspects, 3) affective variables, and 4) theory fixation. Teacher-related factors included all those

reactions in which participants made instructors accountable for their negative learning experiences because they were monotonous, insensitive, or indifferent to the students' needs. Content-related aspects accounted for those comments in which learners expressed inappropriateness of the syllabus because it was either to basic or too challenging for their current proficiency. Affective variables comprised learners' reports of both anxiousness and fear of mockery by peers or teachers themselves. Finally, theory fixation alluded to learners' complaints about their classes being overly focused on theory or written practice. All of these results shed some light on the crucial role of the teacher and the suitability of the syllabus. Table 8 illustrates these findings.

**Table 8**

***Students' rationale for negative experiences in prior English classes***

| **Categories** | **Negative Experiences 37 / 80** |
|---|---|
| Teacher-related factors | 17 / 37 (45.9%) |
| Content-related aspects | 7 / 37 (18.9%) |
| Affective variables | 6 / 37 (16.2%) |
| Theory fixation | 5 / 37 (13.51%) |

**Students' perspective of an ideal English course**

At the end of the questionnaire, participants were allowed to speak (write) their mind on all those aspects they wish in an ideal English course. Of 122 responses, 10 were discarded due to irrelevance and ambiguity while 110 provided

a myriad of expectations. These responses were coded into five categories: 1) speaking interaction, 2) balance, 3) safe environment, 4) customization, and 5) English-mastery (see Table 9). Speaking interaction (57/110) accounted for the learners' hopes for an interactive class in which there is full and continuous spoken communication in a variety of activities and tasks. Balance (23/110) encompassed comments that reflected the learners' expectations of a learning environment that integrated homogeneous linguistic skills while keeping an equilibrium between theory and practice. The concept of safe environment (14/110) was understood as the participants' wishes for a classroom atmosphere in which they wouldn't feel intimidated or threatened neither by the instructor nor their peers when participating. Customization (11/110) dealt with the learners' aspirations for a tailor-made course in terms of population size, proficiency, and thematic contents. Finally, English-dominance constituted those statements that denoted the students' want of an English-only speaking policy during their lessons. These findings reflect the crucial role of spoken interaction in the target language for the students as well as their need for an encouraging environment that motivates them to participate. The results correlate with data from students' prior experiences in terms of what constituted negative and positive encounters, namely highly interactive and engaging lessons versus monotonous and discouraging class experiences.

**Table 9**

***Ranking of students' hopes for an ideal English course***

| Categories | Results |
|---|---|
| **Speaking Interaction** | **57 / 110 (51.8%)** |
| **Balance** | **23 / 110 (20.9%)** |
| **Safe Environment** | **14 / 110 (12.7%)** |
| **Customization** | **11 / 110 (10%)** |
| **English-dominance** | **10 / 110 (9 %)** |

***Conclusions***

With respect to the students' target language needs, the results gathered from the three populations (specialist informants, stakeholders, and students) indicate the following salient needs: reading manuals; communicating via email with clients, supervisors, and team members; giving presentations, particularly proposal presentations; maintaining formal conversations about engineering topics; understanding talks/lectures; and attending engineering-related conferences, seminars, and workshops. Concerning wants, nearly 70% of students indicated that they would like the course to focus on both their needs as engineering students and their future needs as engineering professionals. Additionally, slightly more than 50% of the students indicated a desire to focus on two particular skills during the course: giving oral presentations and maintaining a

formal conversation about engineering. Finally, the lacks for this population from the students' perspectives appear to include the following: writing academic articles, giving oral presentations, orally summarizing an idea of an engineering expert, writing a technical report, and using engineering vocabulary.

In terms of learning styles and strategies, the results from the students' questionnaire indicate that most students are both kinesthetic (80%) and auditory (85%) learners. Also, most participants reported perseverance and cognitive ability as their greatest strengths as students, while inattentiveness and time management were identified as their weaknesses. Learners also referred to classroom preferences by revealing flexibility to work in groups or pairs and showing predilection for class exercises, illustrated materials, problem-resolution activities, innovation-related discussions and oral reports. Regarding their past learning experiences, students reported effective learning results (27.9%) and intrinsic motivation (25.5%) as the main factors influencing a positive experience in previous English classes. Additionally, they said that teacher-related factors were the most serious issues when they had negative incidents Finally, participants suggested that an ideal English course would entail speaking interaction, a theory-practice balance, a safe environment to participate, customization of content, and a fully English-dominant environment.

# Chapter II: Syllabus

## Course Logo


The course logo incorporates different items that serve as a representation for the target population of this course. The gear represents the mechanical engineers who spend their professional lives innovating, designing, and analyzing machines and tools that have an important role in our current society.

The circuit connections illustrate the links that electrical engineers create, simplifying our lives and bringing people and companies together. Finally, both representations are combined as one to show the connection professionals of these fields have and all the hard work they do to bring innovation to our world.

The course is called “Assembling Communication” since our mission as ESP instructors is to assemble and bring our pedagogical contribution into the lessons to provide learners with the appropriate language tools to perform their tasks and communicate not only in their academic but also in their professional field.

## Course Description

The course “Assembling Communication” is an educational resource for future engineers from the University of Costa Rica who want to improve their English proficiency in a variety of skills in their academic and professional environment. These lessons were designed and will be taught by three students of the practicum of the Master’s Program in Teaching English as a Foreign Language. The course will be divided into 14 sessions scheduled every Monday from 5pm to 6:50pm The team's mission is to help students to develop their English proficiency with creative and engaging activities that will promote critical thinking and innovation.

The selected features are meant to provide students with the necessary tools and useful expressions to respond to their needs in terms of competence to effectively communicate in their field. This includes field-specific vocabulary, grammatical structures, and soft skills. To this end, students will be exposed to authentic materials such as user guides, security protocols, podcasts, conferences, and others to prepare them for a real-life context. Moreover, the strategies necessary to effectively comprehend written texts such as skimming and scanning will be presented throughout the units, methods that will be helpful when analyzing manuals and protocols. Overall, the activities cover a large sample of various learning styles and techniques aiming to create a safe environment for the students who will be improving their skills through these units.

## Goals and Objectives

### *Unit 1: Constructing Networks*

**Goal:** By the end of the unit, students will be able to interact professionally with engineers and engineering experts at conferences, seminars, and workshops by using appropriate vocabulary, structures, and register.

**General Objectives:**

By the end of the lesson, students will be able to

1. Successfully maintain a formal conversation about a new technology with other engineers at a webinar by using appropriate conversation starters, exchanging opinions about the technologies, and expressing agreement or disagreement.
2. Appropriately establish professional connections with other engineers at a conference by asking about and sharing engineering interests, mentioning career goals, and exchanging contact information.
3. Properly interview an engineering expert by expressing appreciation and formulating clear, well-focused questions about the expert's research.

***Unit 2: Building Connections***

**Goal:** By the end of the unit, students will be able to determine the quality and suitability of materials and components for specific projects by identifying their properties, describing their advantages and disadvantages, and requesting further information about their specific features.

**General Objectives:**

By the end of the lesson, students will be able to:

1. Successfully describe characteristics of specific types of materials/components used for projects or products by giving a short presentation.

2. Accurately explain advantages and disadvantages of using different materials and components to ensure the good quality of product by giving an oral report.

3. Politely request information via email about materials or components in order to determine cost and safety issues by using appropriate language and formulating clear, concise questions.

***Unit 3: Innovation and Creativity***

**Goal:** By the end of the unit, students will be able to discuss, describe, explain, and suggest innovative proposals for engineering projects with little to no effort by summarizing main ideas of texts orally.

**General Objectives:**

By the end of the lesson, students will be able to:

1. Successfully interpret tables, figures and data from research reports such as manuals, protocols, and articles related to innovative projects by using the appropriate language and vocabulary.
2. Accurately identify main ideas in real life scenarios such as TED Talks by identifying meaning from context.
3. Propose innovative products to clients and coworkers by using the appropriate vocabulary, language, organization, and persuasive skills.

## Methodology

### *Approach*

In light of the specific linguistic and learning needs of the target population described in this report, a task-based language teaching approach (TBLT) seems

to offer the best opportunities to achieve the goals and objectives for the ESP course. To describe a TBLT approach, a definition of what a task implies must be attempted first. An early definition was provided by Breen (1987, as cited in Willis & Willis, 2007), who describes it as “a range of work-plans which have the overall purpose of facilitating language learning – from the brief and simple exercise type to more complex and lengthy activities such as group problem-solving or simulations and decision making” (p.12). Breen’s concept sheds some light on the kind of activities that are part of a TBLT lesson. Based on this definition, course designers may opt from a number of class activities that involve making a decision, simulating a real-life scenario, or discussing possible solutions for a specific problem. On a different perspective, Nunan (2004) made a distinction between a task and a pedagogical task. As language teachers, the concept of a pedagogical task is of high relevance, which Nunan defines as

> A piece of classroom work that involves learners in comprehending, manipulating, producing or interacting in the target language while their attention is focused on mobilizing their grammatical knowledge in order to express meaning, and in which the intention is to convey meaning rather than to manipulate form (p.4)

Thus, a pedagogical task encourages learners to manipulate the target forms without focusing on meaning. In an ESP context, learners are guided to use target language spontaneously, while focus on form becomes complementary at the end of the task cycle. Nunan (2004) also emphasizes that a task, as a communicative act in itself, must convey a “sense of completeness.” Thus, the

focus of a TBLT lesson centers around procedural knowledge (meaning) rather than declarative knowledge. Skehan (1998) agrees with Nunan that meaning and completion are paramount to define a task, but he also highlights the need for real-world comparability and outcome-oriented assessment. Cordoba and Navas (2009) contribute to the discussion by adding a definition of task within the ESP context. The authors argue that an ESP task "should reflect what learners need to do in real-life situations at the workplace" (p. 2) while also "be based on authentic materials obtained from written or oral texts which have not been adapted". (p. 2). A synthesis of these assumptions renders a definition of TBLT as an educational framework which facilitates language learning through work-plans and pedagogical tasks, which center around an ESP task that is meaning-focused, outcome-oriented, comparable to real-world scenarios, and based on authentic materials. These components agree with the target population's reported needs, which could be best addressed by incorporating meaningful task-like interactions that reflect their immediate needs as college students and their delayed needs as working engineers. A TBLT approach offers engineering students increasing opportunities to interact with authentic material of their interest in tasks that are designed to reflect their everyday needs in terms of both written and oral communication. The outcome-oriented nature and the sense of completion in TBLT also agree with the reported learning and affective factors previously explained in the needs analysis, which revealed a strong need for a sense of achievement in students in order to stay motivated.

### *Classroom Dynamics*

For each lesson, instructors will adopt a team-teaching strategy for each lesson of the ESP course. While one of the instructors takes the role of the lead teacher, the other two will take a variety of roles as assistant teachers. Lead teacher and assistant teachers will meet beforehand to coordinate the dynamics for the approaching lesson. Assistant teachers will cooperate with the lead teacher by sending materials at established times and monitoring students' progress during different stages of the class. Considering the importance of pair and group work as "central to task-based teaching" (Ellis, 2009, p.14), learners will spend a reasonable amount of time working and interacting with peers. These activities and tasks require a constant attention from the instructor, which can be addressed with a team-teaching strategy. Assistant teachers will make themselves available to students to answer their questions, clarify instructions, and offer any additional aid that is requested. Finally, teacher assistants will adopt the key role of supporting the lead teacher by modeling the use of procedural and task language. For example, new vocabulary will be introduced and the lead teacher will rely on the two assistant instructors to model the use of the language in order to facilitate understanding. The target population is large, and time is limited; therefore, a team-teaching strategy can offer plenty of advantages to both teachers and students.

***Tasks and Techniques, and their Rationale***

In TBLT, a lesson is divided into three main stages: pre-tasks, main task, and post-tasks. Ellis (2009) identifies pre-tasks as the activities that "prepare students to perform the task in ways that will promote acquisition" (p. 7). The

author distinguishes four different alternatives to design pre-tasks. The first type, performing similar tasks, refers to those activities that resemble the main task in content and form. The second type, providing a model, implies an activity that allows learners to be exposed to a model of the main task's expected performance. Ellis suggests that this "involves presenting them with a text (oral or written) to demonstrate an 'ideal' performance of the task" (p. 8). Third, non-preparation activities require learners to participate in different interactions that help activate schema and reduce either cognitive or linguistic demands. The benefits are explained by Ellis when he affirms that

> When learners know what they are going to talk or write about they have more processing space available for formulating the language needed to express their ideas with the result that the quantity of the output will be enhanced and also fluency and complexity. (p.9)

Finally, strategic planning is concerned with tasks or activities which involve the provision of time slots for students to prepare the main task. In contrast to previous types, Ellis clarifies that this "involves the students considering the forms they will need to execute the task work plan they have been given" (p.9). Thus, learners do not perform or are exposed to a similar task, but they can be given the linguistic features expected to be used during their performance.

Tasks, the second main stage of the TBLT cycle, can take a variety of forms. Nunan (2004) recognizes three main types: information-gap, reasoning-gap, and opinion-gap tasks. The first type conveys an exchange of information among two or more participants while "generally calling for the decoding or encoding of

information from or into language" (p. 57). According to Nunan, information-gap activities usually involve pair work and demand correctness and completeness in the transfer of relevant information. The second type deals with an exchange of thoughts, based on input, which calls for "processes of inference, deduction, practical reasoning, or a perception of relationships or patterns" (p. 57). In this way, learners are required not only to comprehend information, but also to make reasoned choices based on the text provided. Finally, the third type entails expressing preferences, feelings, and attitudes towards a particular text. Nunan warns, however, that "there is no objective procedure for demonstrating outcomes as right or wrong, and no reason to expect the same outcome from different individuals or on different occasions" (p.57). Therefore, opinion-gap tasks can be more challenging to assess. These three types can and will take a number of forms when implemented in this ESP course. Some examples would be formal and informal dialogues in conference or professional meetings, role-plays that illustrate real-life interactions among engineers, picture-based descriptions of materials or components, presentations of potential innovations, and problem-solving discussions.

The third stage of the cycle brings closure to the lesson in the form of post-tasks. According to Ellis (2009), these may have three pedagogical options. One possibility involves repeating the task performance. Ellis suggests that such a task may take place under the same conditions or these may vary. The purpose seems to be reinforcing forms and meaning by allowing learners to repeat their performance. A second alternative is reflecting on the task. Ellis observes that

asking students to report on their performance is advisable when he states that "Encouraging students to reflect on their performance in these ways may contribute to the development of the metacognitive strategies of planning, monitoring and evaluating" (p. 19). Learners may be asked to reflect about the language they use and ways to improve their skills, or to evaluate their performance. A third option is focusing on form. This is considered by Ellis as particularly necessary to avoid the potential risk of students developing fluency at the expense of accuracy during previous tasks. He explains that this can be done "by asking students to report on their performance of the task, as discussed above, but it can also be achieved by a direct focus on forms." (p. 19). Thus, post-tasks will be of great help for students to become more actively involved in their learning process while consolidating their explicit knowledge and accuracy.

***Roles of Learners***

During the delivery of this course, learners will be expected to have an active role in the classroom. Nunan (2004) points out that ideal TBLT students should "see themselves as being in control of their own learning rather than as passive recipients of content provided by the teacher or the textbook" (p. 67). Thus, the engineering students will be encouraged to be independent learners who take risks during oral and written interaction, negotiate meaning to complete tasks, and monitor their own progress. They will also be expected to become fully aware of their learning styles so that they can use different learning strategies to the best of their abilities. Nunan (2004) suggests that "There is growing evidence that an ability to identify one's preferred learning style, and reflect on one's own learning

strategies and processes, makes one a better learner" (p. 65). The more responsibility learners take for their learning process, the more meaningful the lessons, activities, and tasks will be.

TBLT theory suggests three key roles for learners: group participants, monitor, and risk taker and innovator (Hismanoglu M, & Hismanoglu S, 2011). The first role reflects learner's interaction either in groups or pairs. Course designers will prepare activities and tasks that will require students to interact between and among each other in order to achieve a specific outcome. The second role aims at providing several opportunities for learners to be exposed to target language use in context. Thus, demonstrations of language use by the teachers will be part of every lesson in this course, and learners are expected to be listen and observe actively. Finally, the third role implies a level of determination expected in the students. Hismanoglu M. and Hismanoglu S. (2011) observe that "many tasks will push learners to generate and expound messages for which they do not have full linguistic resources and prior experience" (p. 5). Different activities and tasks throughout the course might be more challenging than students expect. Therefore, they are expected to be resourceful and take risks to accomplish the objectives established in the course.

***Role of the teachers***

In a TBLT approach, the roles of the teacher can make a substantial difference in how learning outcomes turn out. Considering the learner-centered nature of TBLT, teachers' contributions vary significantly from traditional ESL/EFL learning (Branden, 2016). Three essential roles of the TBLT teacher are

distinguished and emphasized by Branden: a) materials and tasks designer, b) organizer and c) interactional partner and supporter. When designing a task cycle, an essential function of the student-teachers is to select content and determine the focus of each lesson. Branden (2016) highlights, as the first tole of TBLT instructors, that teachers “decide (at least partly) which tasks and exercises the student will be exposed to, which text material will be covered, and which input the teacher will offer in their classroom” (p. 167). Such decisions are made based on the needs and lacks previously reported by this target population. Additionally, teachers will make decisions about the amount of time devoted to each of the stages of the task cycle, and to what extent additional hours are assigned to a learning objective if performance expectations are not met. The second role of TBLT teachers is as organizers, which is of particular importance for a team-teaching strategy. Branden indicates that, as organizers, teachers must “make sure that the sequence of activities the learners engage in is logical, coherent, and is built up in such a way that learners are continuously exposed to challenges that remain doable” (p. 169). In this sense, having two assistant-teachers can be of great help to the lead student-teacher to make sure that materials are delivered efficiently, activities and tasks are achievable during pair or group work, and instructions are clear. Finally, the teacher role of interactional partner and supporter is key to this target population. Based on their needs’ analysis, the engineering students expect to find a safe and encouraging environment where they can interact freely. Branden recommends that teachers should “create a safe climate in which students do not feel overly anxious or inhibited to speak out and

practice their productive skills, should treat all learners with respect, keep students motivated, give them positive feedback to enhance their well-being and self-confidence, and encourage them to persist even if the task is difficult" (p. 171). Teachers can fulfill this role by engaging in negotiation of meaning, asking questions to elicit output, providing feedback, and modeling the use of target language (Branden, 2016). To this end, teachers will interact actively and purposefully with students in individual, pair, or group work by guiding discussions, eliciting responses, offering suggestions, and demonstrating the use of target language.

In this segment, three main roles for the ESP teacher, based on the TBLT approach, have been described: materials and tasks designer, organizer, and interactional partner and supporter. Instructors are responsible for providing all necessary conditions to maximize learning opportunities. By making decisions about the contents to be studied and practiced, learners are given an outline of their learning outcomes. By structuring class activities, teachers guide students towards their goals step by step. By giving support and eliciting interaction, course participants are inspired to overcome linguistic and affective obstacles that may emerge during their learning process. Overall, teachers' accountability is constantly reflected through every cycle of the ESP lesson.

### *Engaging Kinesthetic and Inattentive Learners*

An additional challenge to the execution of this course is working with reportedly kinesthetic and inattentive learners in a virtual environment. Even though the literature that addresses learning styles in an online setting is limited

(Pinchot & Paullet, 2014), some suggestions offered by different authors are applicable and adaptable to this context. Zapalska & Brozik (2006) observed the importance of acknowledging these learning styles when they observed that "Instructors who know about differences in learning styles are better able to modify their teaching strategies and techniques in online education" (p. 326). Thus, making anticipated decisions based on the target population's characteristics gives course designers the upper hand to tailor activities and materials in a way that benefits learners as much as possible. Also, it is fundamental to mention that the learners are not exclusively kinesthetic. The results of the needs analysis indicate that they are strong auditory learners as well. However, Pinchot and Paullet (2014) argue that although learners may have overlapping learning styles "most people will have a dominant style falling into either the visual, auditory, or kinesthetic categories" (p. 30). Therefore, some strategies to deal with dominant and overlapping learning styles are considered for the implementation of this course.

Zapalska and Brozik (2006) suggest that teachers should provide content in multiple formats. They recommend using PowerPoint as well as audio-streaming. Pinchot and Paullet (2014) warn instructors not to rely entirely on PowerPoint as it may become monotonous for learners; hence, they suggest using other tools such as Prezi. In relation to technology tools, an important caveat is indicated by Junk et al. (2007) when they point out that "course developers must balance the need to service learners on slow connections against the opportunity to enrich the course material with items requiring considerable bandwidth" (p. 4) In this case, a series of digital tools such as Padlet, liveworksheets, learningapps, and Google Classroom

will be used in order to provide students with a variety of resources while also receiving input in different formats and allowing fluency in slow-connection settings. Additionally, Zapalska and Brozik advise encouraging collaborative interaction. Considering the online environment, they suggest that activities be both individual and group-based so that learners “solve problems, analyze cases, and develop group deliverables” which “allow individual ideas, perspectives, and experiences to be heard and collectively considered” (p. 330). Considering this and the digital platform Zoom, which is also recommended by Pinchot and Paullet, course designers will enable different opportunities for students to interact in breakout rooms (groupwork) and individually in addition to reporting in the main session.

Finally, coping with learners who report inattentiveness and a short-memory span can be particularly difficult in online education. Junk et al. (2007) highlight that engaging students in online teaching can be a demanding task because “instructors are not able to see the student’s confused look as they would in a face-to-face classroom,” thus “it is extremely important to make sure directions and expectations are very clear and explicit” (p. 5). Moreover, even when provided with cameras, students may not be willing to turn it on during online sessions. For this reason, establishing clear protocols prior to the beginning of the course and giving effective instructions will be essential to ensure learners’ engagement. In addition, Lim (2004) emphasizes the importance of using authentic materials and meaningful tasks, key components to TBLT, as an effective technique to engage learners. He argues that “Authentic activities have the capability to motivate and

encourage learner participation by facilitating learners' engagement with the instructional message of the online learning component" (p. 20). Hence, addressing the topics and skills mentioned in the needs analysis in tasks that are designed in light of their learning style will be a key strategy to keep learners' attention for longer periods of time. Also, to increase their motivation to stay on task, the design of materials will have a pivotal role, as stated by Junk et al. (2007) when they affirm that "In creating online course materials that motivate students, use sensory stimuli such as aesthetically pleasing web design, well organized materials, and graphics that garner attention and stimulate curiosity" (p. 6). In this way, by offering content in multiple formats, providing opportunities for individual and group interaction, addressing meaningful topics, establishing protocols, and creating appealing and authentic materials, learners will stay motivated and remain attentive for longer periods of time.

**Contents**

***Unit 1: Constructing Networks***

**Goal:** By the end of the unit, students will be able to interact professionally with engineers and engineering experts at conferences, seminars, and workshops by using appropriate vocabulary, structures, and register.

**General Objectives:**

By the end of the lesson, students will be able to

1. Successfully maintain a formal conversation about a new technology with other engineers at a webinar by using appropriate conversation starters, exchanging opinions about the technologies, and expressing agreement or disagreement.

2. Appropriately establish professional connections with other engineers at a conference by asking about and sharing engineering interests, mentioning career goals, and exchanging contact information.

3. Properly interview an engineering expert by expressing appreciation and formulating clear, well-focused questions about the expert's research.

| General Objective | Tasks | Skills | Language Focus | Strategies |
|---|---|---|---|---|
| **1** | Maintain a five-minute formal conversation at a webinar with other engineers about a new technology by using appropriate conversation starters, exchanging opinions | **L**<br>**S** | **Vocabulary**<br>**Introductions:**<br>Hello, I'm…<br>Hello. My name's…<br>Nice to meet you (too).<br>**Conversation starters:**<br>Have you heard about…?<br>What do you think of…?<br>What's your take on...?<br>Eliciting an opinion:<br>What do you think about…?<br>What's your perspective on…?<br>**Giving an opinion**:<br>I'd say that… / For me,<br>Agreeing / Disagreeing:<br>Definitely. / Absolutely.<br>I agree (completely).<br>I see your point, but…<br>I see it differently.<br>Engineering technologies<br>photovoltaics, thin-film solar cells, perovskite materials, | Active listening<br>Asking questions<br>Answering questions<br>Giving/Eliciting opinions<br>Expressing agreement / polite disagreement |

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| | about the technologies, and expressing agreement or disagreement. | | lightweight paper batteries, photoluminescence material<br><br>**Grammar**<br>Question formation for yes/no and wh-questions<br><br>**Pronunciation**<br>Intonation for yes/no and wh-questions | |
| **2** | Ask classmates about engineering interests and career goals and politely request contact information to complete a conference | **L**<br><br>**S**<br><br>**W** | **Vocabulary**<br>**Specialization interests and career goals:**<br>What's your area of engineering?<br>What areas of specialization are you interested in?<br>What would you like to do after you graduate/in the field of…?<br>I'd like to…<br>I'm interested in…<br>**Areas of specialization in engineering** (automatization, renewable energies, design, education and research, telecommunications, manufacturing, thermodynamics, electricity and potential, etc.)<br>**Statement of intent/purpose:**<br>I'd like to discuss ____ with you further.<br>I'd like to speak with you again about _____. | Listening for details<br><br>Asking questions<br><br>Making polite requests<br><br>Spelling |

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| | “contact guide”<br><br>Tell classmates about engineering interests and career goals.<br>Give contact information.<br>. | | **Request for contact information:**<br>Could I get your email? Would you mind giving me your contact information?<br><br>**Spelling:**<br>Could you spell that for me? ___ as in ____.<br><br>Thank you / Hopeful farewell:<br>Thank you very much.<br>I look forward to speaking with you again soon.<br>Take care!<br><br>**False cognate:** discuss<br><br>**Grammar**<br>Modals for polite requests<br>Would you mind…? Could you…?<br><br>**Pronunciation**<br>Modals would and could, yes / no question intonation, wh-question intonation | |
| **3** | Express appreciation at the beginning and end of the conversation and establish purpose.<br>Formulate accurate | **S**<br>**L**<br>**W**<br>**R** | **Vocabulary**<br>Express appreciation and purpose: Thank you for meeting with me.<br>I’d like to ask you about…because…<br><br>Signposting to introduce questions: First, Second, Third, The first question I have is… | Signposting<br><br>Listening for details<br><br>Confirmation checks<br><br>Asking follow-up questions |

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| | questions based on prompt words from an information-gap handout and introduce them with numerical signposting. Take notes to record the answers. | | My second question is about…<br>My last question relates to…<br><br>Confirmation checks: Could you repeat what you said about…? Sorry, did you say___ or ____?<br><br>**Grammar**<br>Question formation<br><br>**Pronunciation**<br>Emphasizing signposting words<br>Intonation for questions | Note taking |

***Unit 2: Building Connections***

**Goal:** By the end of the unit, students will be able to determine the quality and suitability of materials and components for specific projects by identifying their properties, describing their advantages and disadvantages, and requesting further information about their specific features.

**General Objectives:**

By the end of the lesson, students will be able to:

1. Successfully describe characteristics of specific types of materials/components used for projects or products by giving a short presentation.

2. Accurately explain advantages and disadvantages of using different materials and components to ensure the good quality of product by giving an oral report.

3. Politely request information via email about materials or components in order to determine cost and safety issues by using appropriate language and formulating clear, concise questions.

| General Objective | Tasks | Skills | Language Focus | Strategies |
|---|---|---|---|---|
| **1** | Describe to clients the characteristics of different components and materials that could be used in a particular project. | **S**<br>**L**<br>**R** | **Vocabulary**<br>Words related to types of materials or components and their characteristics:<br>Ferrous metals, ceramics, carbon fiber, wires and cables.<br>Properties, resistance, conductivity, temperature, corrosion, flexibility, insulation, strength, humidity.<br><br>**Grammar**<br>Subject-verb Agreement<br>Passive Voice<br>(Both used to describe facts about materials and components) | Describing details<br><br>Summarizing information |

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| | | | Demonstrative<br>Adjectives:<br>This, That, Those, These.<br>Pronunciation<br>Word stress in nouns and adjectives.<br>Vowels in cognates with different or similar pronunciation.<br>Ex: conductivity | |
| **2** | Explain to clients to clients the disadvantages of using particular components and materials.<br><br>Explain to clients to clients the | **S**<br><br>**L**<br><br>**R** | **Vocabulary**<br>Adjectives and compound adjectives to compare materials and components:<br>corrosion resistant, electrically conductive, expensive, inexpensive, cost-saving, energy-efficient, hard, malleable, synthetic, flexible, suitable.<br><br>**Adverbs such as:**<br>typically, commonly, rarely, primarily.<br>**Useful phrases:** | Explaining<br><br>Distinguishing<br><br>Giving advice |

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| | advantages of using particular components and materials. | | “Based on this information, I would advise you to…” “In your position, I would …”<br><br>**Grammar**<br>Comparatives and Superlatives<br>First Conditional<br><br>**Pronunciation**<br>Plural noun endings: /s/ /z/ /iz/<br>Pronunciation of key words | |
| **3** | Write a formal email to request information related to materials or components to determine cost and safety issues. | S<br>L<br>R<br>W | **Vocabulary**<br>Basic expressions related to formal emails:<br>subject lines, greetings, connectors, prepositions, closing expressions, attachments.<br><br>Verbs that would help students explain the purpose of their email: | Requesting politely<br><br>Asking questions<br><br>Showing gratitude |

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| | | | examine, determine, involve, assemble, develop, contain, operate, analyze.<br><br>**Grammar**<br>Present Continuous<br>Modals: would, could, might<br>Relative Clauses<br><br>**Pronunciation**<br>Consonant – vowel linking | |

***Unit 3: Innovation and Creativity***

**Goal:** By the end of the unit, students will be able to discuss, describe, explain, and suggest innovative proposals for engineering projects with little to no effort by summarizing main ideas of texts orally.

**General Objectives:**

By the end of the lesson, students will be able to:

1. Accurately interpret data from tables and figures in written texts such as manuals, protocols, and research articles related to innovative projects by using the appropriate language and vocabulary.

2. Accurately identify main ideas in real life scenarios such as TED Talks by identifying meaning from context.

3. Successfully propose innovative products to clients and coworkers by using the appropriate vocabulary, language, organization, and persuasive skills.

| General Objective | Tasks | Skills | Language Focus | Strategies |
|---|---|---|---|---|
| **1** | Show understanding of research results by explaining tables and figures using the appropriate language and vocabulary. | **R**<br>**W**<br>**S** | **Vocabulary**<br>Words related to the interpretation of results<br>Table X shows that___<br>The majority of ____<br>The minority of _____<br>These results suggest that ____<br>The importance relies on ____<br>These results imply that _____<br><br>**Grammar**<br>Imperatives to give instructions.<br>Make sure the series module is properly mounted.<br>Select the appropriate type from the lists.<br><br>**Pronunciation**<br>Final -s sounds: | Skimming<br>Scanning<br>Interpreting<br>Guessing meaning from context |

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| | | | /-s/, /-z/, /-iz/<br>Suggests / words / changes | |
| **2** | Analyze and discuss innovative proposals to identify problems and create solutions.<br><br>. | **S**<br>**L**<br>**R**<br>**W** | **Vocabulary**<br>Agreeing / Disagreeing<br>I believe that ___.<br>I agree with you.<br>I disagree because ____.<br>I hear what you are saying, but _____.<br>Cause and effect signal words: due to, as a result of, as a consequence, since.<br><br>**Grammar**<br>Cause and effect:<br>Since Terry wants to go shopping, I designed this electric device to help her.<br>As a result of medical complications, she lost her legs below her knees.<br>**Pronunciation** | Identify and support main ideas<br><br>Guess meaning from context<br><br>Providing solutions<br><br>Presentation skills |

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| | | | Linking words<br>Because of /bɪˈkɒzʌv/ | |
| **3** | Propose an innovative product that will respond to one of the identified needs. Present to coworkers and supervisors. | S<br>L<br>W<br>R | **Vocabulary**<br>Presentation Expressions<br>Good evening, the purpose of my presentation is ____.<br>The purpose of the product is ____.<br>It will be beneficial because____.<br>My objective is ____.<br>To give you an example ___.<br>Based on our findings ___.<br><br>**Grammar**<br>Conditionals<br>If the team approves the proposal, the company will have benefits.<br>The solution to a problem will be given if the proposal is accepted.<br><br>**Pronunciation** | Presentation techniques<br><br>Persuasive skills |

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| | | | Reduction of Vowel Sounds<br>Schwa / ə / | |

**Assessment**

As Graves (2000) states, assessment must be informed by the goals and objectives of a course. Determining what is assessed and how to assess it depends on the conceptualization of course content and "the way that conceptualization has been articulated in goals and objectives" (p. 210). Given the close relationship between course content and needs analysis, the assessment decisions for this course will be based on the information gathered during the needs analysis as well as the goals and objectives for the three units. The assessment types that will be used in Assembling Communication include task-based and authentic, informal and formal, and formative and summative. The following sections provide details regarding the definitions of these assessment types as well as their rationale.

***Task-based assessment and authentic assessment***

Given the task-based approach adopted in this course, task-based and authentic assessment are a must. Shehadeh (2012) emphasizes that task-based assessment is both authentic and communicative. Rather than focusing on grammar or vocabulary, task-based assessment "takes the task as the fundamental unit for assessment" (p. 157). In this course, three assessments will consist of tasks corresponding to the target-needs addressed in the goals and

objectives for the three units. More specifically, these task-based assessments will assess students' performance in completing tasks that are required for their current studies or that will be necessary for their future work as engineers. Hence, these assessments will provide the students with valuable feedback; they will show students the extent to which they are able to perform necessary tasks in English in their current courses and future workplaces.

Authentic assessment refers to assessments which mirror real-life situations and contexts (Capraro et al., 2012). While all task-based assessments are authentic assessments, not all authentic assessments are task based. In ESP courses, authentic assessment is highly recommended as it assesses how well students perform in situations similar to what they encounter in their studies or will encounter in their work. In contrast to pedagogically-designed assessments, which often contain pedagogically-manipulated and repetitive structures, authentic assessments involve real-life language structures. As stated by Sweet in his seminal work, authentic texts "do justice to every feature of the language" (Sweet, as cited in Gillet, 2013). By extension, authentic assessments do justice to the real-life situations in which the language is used. In order to provide the engineering students in Assembling Communication with a measure of their performance in the situations they will likely face, authentic assessment will be employed for all five assessments.

***Informal / Formal assessment***

Assessment in the course will be conducted both formally and informally. As Brown (2004) indicates, informal assessment often occurs during classroom tasks

to motivate students to perform, but it does not involve recording results or “making fixed judgments” (pp. 5-6). Some examples of informal assessment include spontaneous comments, oral and written feedback, suggestions for pronunciation, and advice on how to improve note taking (p. 6). Due to the communicative nature of the classes, the instructors will have ample opportunity to assess students informally. Informal assessment will occur continuously in the form of praise, oral and written corrective feedback, and suggestions for improvement in order to encourage growth, motivation, and learning throughout the course.

Formal assessment refers to procedures that are “specifically designed to tap into a storehouse of skills and knowledge” (Brown, 2004, p. 6). In contrast to informal assessment, which can occur spontaneously, formal assessment is “systematic” and “planned” (p. 6). Five formal assessments will be planned and implemented in this course, among them, the three tasks contemplated for task-based assessment and the two remaining authentic assessments. Together, they will gauge students’ abilities to access and apply skills and knowledge from the course to real-world tasks and authentic situations. They include three speaking tasks, a listening quiz, and an in-class portfolio.

***Formative / Summative Assessment***

Formative assessment “takes place as the course is in progress” (Graves, 2000, p. 208). This assessment type shows how students have progressed (Graves, 2000) and focuses on the “future continuation [...] of learning” (Brown, 2004, p. 6). In other words, this type of ongoing assessment continuously contributes to students’ learning throughout every step of the learning process.

Formative assessment also allows teachers the opportunity to measure how well the course is meeting the students' needs in order to continue effective practices and change ineffective ones (Graves, 2000, p. 208, p. 215). This type of assessment will occur in the form of corrective feedback, praise, and advice on improvement in order to foster motivation and facilitate continuous learning.

In contrast to formative assessment, summative assessment "does not necessarily point the way to future progress" (Brown, 2004, p. 6). What it does provide, however, is information about the sum of students' achievement, as well as insights into the overall effectiveness of the course (Graves, 2000, p. 215). While formative assessment is an ongoing process, summative assessments are typically implemented at the end of a unit or course. In this ESP course for engineers, the summative assessments will occur at the end of each unit and at the end of the course in order to provide the students and the instructors with information regarding student achievement and course effectiveness.

**Corrective Feedback**

Oral and written corrective feedback will be provided throughout the course to aid students' language knowledge and comprehension. The techniques utilized will come from Lyster et al.'s (2013) oral corrective feedback strategies and Ellis's (2009) written corrective feedback strategies. These will be employed while taking into account several main variables.

When providing oral corrective feedback, the instructors will consider a significant cultural factor. As described by Hiltunen et al. (1999), Costa Rican culture is predicated upon saving face: an emphasis on dignity and courtesy

translates to minimizing embarrassment and shame, both for oneself and others. As the authors state, Costa Ricans “usually take care not to embarrass others, especially in public” (p. 9). This cultural aspect is especially relevant for the language classroom, where opportunities for embarrassment occur as students take risks and make themselves vulnerable in the process.

The cultural aspect of face saving will be taken into account when correcting students in order to minimize embarrassment and maximize a feeling of emotional safety in the classroom. Specifically, the instructors will use input-providing strategies more often when students commit errors in front of the entire class. Utilizing strategies that elicit a correction, such as repetition and repetition with emphasis, could potentially create unnecessary pressure for students to perform well in front of all of their peers and a sense of shame if the correct form is not provided. This technique of using input-providing strategies in the main session will be implemented particularly at the beginning of the course when the population and the instructors are getting to know each other.

In terms of the specific input-providing strategies, explicit correction will be used for errors corresponding to contents of the course and the students’ proficiency levels. Recasts will be employed when time is short, suggest or when a student’s error is beyond the scope of the course; for example, if a student attempts to use the third conditional, the instructors will recast the utterance but not correct it, as the third conditional will not be part of the course content.

As a safe space is established, elicitation strategies will be integrated into the main sessions to provide further opportunities for uptake and repair. These

strategies will also be used from the beginning of the course in the breakout sessions. As Lyster et al. (2013) state, “classrooms learners benefit [...] from the negative evidence available in prompts and from the greater demand they impose for producing modified input” (p. 20). In order to maximize opportunities for uptake and repair, the instructors will use implicit and explicit output-pushing strategies. If an error is not attended to, instructors will increase the explicitness of the strategy and resort in the end to explicit correction (with metalinguistic explanation, time allowing) if the student is unable to repair. For example, if a clarification request is used but the student repeats the error, a metalinguistic clue could be employed. This would increase the explicitness of the strategy but would still provide the student the opportunity to self-correct.

Learning styles will also be taken into account when correcting oral utterances. To engage kinesthetic and visual learners, a list of errors will be provided at the end of the class to provide opportunities for analysis, given that kinesthetic learners have been described not only as movers but as problem solvers (Wood & Sereni-Massinger, 2016). The chat feature of Zoom, the whiteboard, and sharing the screen will also be used to provide the visual of the correct form, to cater to visual learners.

Finally, in order to further encourage repair, uptake, and self-correction, students will be asked to correct errors from their oral assessments. To incentivize this task, the students will be told that they will not receive their grades for the assessments until after the corrections have been made. The errors will be sent in a document and organized into categories (grammar, vocabulary, and

pronunciation). Dictionary links will be provided for students to utilize when making their corrections, and instructors will be available to provide more explicit information (such as a metalinguistic explanation, for example) if necessary. Requiring correction to receive exam grades will be employed not only to foster autonomy and increase self-correction but also to honor the time invested by the instructors in providing their time and energy into the course.

As will be seen in the assessment section, the majority of course assessments and much of the course activities will be dedicated to developing oral skills. While students will complete writing assignments, they will not write long texts that could benefit from a wider range of corrective feedback strategies. Given this, a smaller number of strategies will be used for providing written corrective feedback compared to oral corrective feedback strategies. To provide feedback on written assignments, the instructors will rely mostly on metalinguistic explanations and direct corrections. The sandwich approach will also be used to mitigate negative reactions to corrective feedback and remind students of their areas of strength.

As Pawlak (2014) indicates, deciding the how, why, and when of corrective feedback provision depends on a wide range of factors (p. 110). This section provided an outline of several large-scale factors that will be taken into account, but of course, many more factors exist and will undoubtedly arise as feedback considerations during the course. The approaches described here, then, have been developed as flexible guidelines that will orient the instructors and provide a foundation from which further corrective feedback decisions will be made.

***Assessment Distribution***

During the course, students will be required to complete the following assessments. Table 10 summarizes the assessments, the units in which the assessments will be assessed, and the weight of each assessment in percentage.

**Table 10**

***Summary: course assessments, assessment time, and weight in percentage***

| **Assessment** | **Unit** | **Percentage** |
|---|---|---|
| Speaking task 1 | Unit 1 | 20% |
| Speaking task 2 | Unit 2 | 20% |
| Listening quiz | Unit 3 | 20% |
| Final presentation (Speaking Task 3) | Unit 3 | 20% |
| In-class portfolio | All units | 20% |
| **Total** | | **100%** |

**Syllabus: Student Version**

**University of Costa Rica**
**English for Mechanical and Electrical Engineers**


**Course name:** Assembling Communication
**Instructors:** Fanny Maroto, Carlos González and Kelsey Peterson
**Schedule:** Monday from 5 P.M. to 7:00 P.M.

## I. Course Description

Assembling Communication is an educational resource for future engineers from the University of Costa Rica who want to improve their English skills and proficiency in their academic and professional environment. The lessons are taught once a week with a duration of two hours each lesson. The course was designed and will be taught by three practicum students of the Master's Program in Teaching English as a Foreign Language, with the mission of helping students to develop their English proficiency with creative and engaging activities that will promote critical thinking and innovation.

## II. Course Goals and Objectives

### *Unit 1: Constructing Networks*

**Goal:** By the end of the unit, students will be able to interact professionally with engineers and engineering experts at conferences, seminars, and workshops by using appropriate vocabulary, structures, and register.

**General Objectives:**

By the end of the lesson, students will be able to

1. Successfully maintain a formal conversation about a new technology with other engineers at a webinar by using appropriate conversation starters, exchanging opinions about the technologies, and expressing agreement or disagreement.

2. Appropriately establish professional connections with other engineers at a conference by asking about and sharing engineering interests, mentioning career goals, and exchanging contact information.

3. Properly interview an engineering expert by expressing appreciation and formulating clear, well-focused questions about the expert's research.

***Unit 2: Building Connections***

**Goal:** By the end of the unit, students will be able to determine the quality and suitability of materials and components for specific projects by identifying their properties, describing their advantages and disadvantages, and requesting further information about their specific features.

**General Objectives:**

By the end of the lesson, students will be able to:

1. Successfully describe characteristics of specific types of materials/components used for projects or products by giving a short presentation.

2. Accurately explain advantages and disadvantages of using different materials and components to ensure the good quality of product by giving an oral report.

3. Politely request information via email about materials or components in order to determine cost and safety issues by using appropriate language and formulating clear, concise questions.

***Unit 3: Innovation and Creativity***

**Goal:** By the end of the unit, students will be able to discuss, describe, explain, and suggest innovative proposals for engineering projects with little to no effort by summarizing main ideas of texts orally.

**General Objectives:**

By the end of the lesson, students will be able to:

1. Accurately interpret data from tables and figures in written texts such as manuals, protocols, and research articles related to innovative projects by using the appropriate language and vocabulary.
2. Accurately identify main ideas in real life scenarios such as TED Talks by identifying meaning from context.
3. Successfully propose innovative products to clients and coworkers by using the appropriate vocabulary, language, organization, and persuasive skills.

**III. Methodology**

Following a Task-Based Language Teaching (TBLT) approach, students will participate in different activities and tasks reflecting real life interactions in the fields of electrical and mechanical engineering. These tasks and activities are designed to encourage students to engage in spoken and written communication. They include dialogues with teachers and classmates, expressing interests, describing materials, components, preparing presentations, analyzing texts, presenting role plays, making requests via email, and interacting with experts. Group work and pair work will be highly encouraged throughout the course, and active participation from all learners is expected. Teachers will create a safe environment where all participants feel free to share ideas and ask questions. Attendance, as a key factor for achieving the course goals and developing the intended target language skills, is a crucial requirement.

**IV. Assessment**

During the course, you will be required to complete the following assessments.

| **Assessment** | **Percentage** |
|---|---|
| Speaking task 1…..……. | 20% |
| Speaking task 2……..…….. | 20% |
| Listening quiz……..……. | 20% |
| Final presentation…….…….. | 20% |
| In-class portfolio……...……. | 20% |
| **Total…….** | **100%** |

***Lesson Plans and Materials***

Using a task-based approach, two sample lesson plans were developed.

***Unit # 1: Constructing Networks***

**Lesson 1:** Maintaining formal conversations

**Unit Goal:** By the end of the unit, Ss will be able to interact professionally with engineers and engineering experts at seminars, workshops, and conferences by using the appropriate structures, vocabulary, and register.

**General Objective:** At the end of the lesson Ss will be able to successfully maintain a formal conversation about a new technology with other engineers at a webinar by using appropriate conversation starters, exchanging opinions about the technologies, and expressing agreement or disagreement.

**Specific Objectives:** At the end of the lesson, Ss will be able to…

1. Successfully activate background knowledge about maintaining conversations by providing possible strategies and/or useful phrases to start and maintain a conversation.
2. Successfully compile a list of appropriate communication strategies for formal conversations by sharing their strategies and writing their classmates' strategies.
3. Accurately categorize topics as appropriate or inappropriate for formal conversations by giving and eliciting opinions and expressing agreement and polite disagreement.
4. Accurately match five engineering technologies to their corresponding definitions by giving and eliciting opinions and expressing agreement or disagreement.
5. Effectively propose a technology as a topic for conversation by using one of three previously-studied conversation builders.
6. Successfully maintain a formal conversation about a new technology for six minutes by using appropriate conversation starters, exchanging opinions, and agreeing or disagreeing.
7. Individually reflect on their performance by completing a self-assessment form.
8. Accurately formulate task-related questions by using correct word order and intonation.

| Obj | Procedures | Language | Strategies | Macro Skills | Time Allotted |
|---|---|---|---|---|---|
| **1** | **Warm up:**<br>**A)** T asks Ss to think about what they do or say to maintain a formal conversation. In BRs, Ss share their perspectives with two classmates.<br>**B)** T asks specific Ss to answer with a word or phrase. AT types responses into PPT.<br>Lesson objective is projected. AT reads objective for the class. | **Key Language for task**<br>Opinion questions<br>Opinion statements.<br>**E.g.**<br>*What do you think?*<br>*I think one way is to…*<br>*You can also…* | Activating schema<br>Eliciting and giving opinions | R<br>S<br>L | 15 min |
| | | **Key Language for task**<br>Reporting | Reporting | R<br>W | 20 mins |

| | | | | | |
|---|---|---|---|---|---|
| **2** | **Pre-task # 1:** Ss complete a list of four strategies for maintaining formal conversations.<br>**Planning:** Ss receive a document (Handout 1) with one strategy. Ss read it silently and prepare to share it with the group by answering the questions "What is the strategy about?" "What can you do?".<br>**Reporting:** Starting with Student 1, Ss take turns explaining their strategy to their group. While listening, Ss write the remaining strategies and ask for repetition if necessary. | **E.g.:**<br>*This strategy is about…*<br>*You can…*<br>*For example, …*<br><br>**Useful language**<br>*Can you please repeat?*<br>*Can you repeat the part about…?* | Listening for details<br>Requesting repetition | S<br>L | |

| | | | | | |
|---|---|---|---|---|---|
| | **Assessment:** The complete strategy list is shared in the PowerPoint for Ss to check their answers.<br>***Culture note:*** T explains that maintaining eye contact is cultural and suggests following the other person's lead (i.e. observing the other person to see if he/she maintains eye contact) | | | | |
| **3** | **Pre-task # 2:** Ss classify topics on an editable PPT slide as appropriate or inappropriate by sharing and eliciting opinions and expressing agreement or polite disagreement. Then, Ss think of a | **Key Language for task**<br>Language for exchanging opinions and expressing agreement or disagreement<br><br>**E.g.:** | Agreeing and Disagreeing | R<br>S<br>L | 20 mins |

| | | | | | |
|---|---|---|---|---|---|
| | specific example for each topic (a sub-topic)<br>S reads instructions. AT models useful language—T emphasizes polite tone in the phrases for disagreement.<br>In new groups of four (BRs), Ss classify topics by eliciting and giving opinions and agreeing or disagreeing.<br>**Assessment:** T shares answers by writing them in the chat and answers questions about the answers as necessary. | **Exchanging Opinions**<br>*What do you think about…?*<br>*I'd say it's…because…*<br>*For me, it's…because…*<br><br>**Agreeing and Disagreeing**<br>Definitely. / Absolutely.<br>I agree (completely).<br>I see your point, but…<br>I see it differently. | Exchanging opinions | | |
| | **Pre-task # 3:** Match technologies to their corresponding definitions. | **Exchanging Opinions** | Agreeing and Disagreeing | R<br>S | 10mins |

| | | | | | |
|---|---|---|---|---|---|
| **4** | Before Ss go into BRs, T and ATs read the technologies and their definitions to provide positive input (pronunciation of the terms).<br>In pairs, Ss match the technologies by exchanging opinions and agreeing or disagreeing.<br>**Assessment:** T calls on individual Ss to provide the answers and praises or corrects as necessary. Any terms that ATs or Ts noticed being pronounced incorrectly in the BRs are repeated to encourage pronunciation accuracy. | *What do you think about…?*<br>*I'd say it's…because…*<br>*For me, it's…because…*<br><br>**Agreeing and Disagreeing**<br>Definitely. / Absolutely.<br>I agree (completely).<br>I see your point, but…<br>I see it differently.<br><br>**Technologies**<br>photovoltaics<br>thin-film solar cells<br>perovskite materials<br>lightweight paper batteries<br>photoluminescence material | Exchanging opinions | L | |

| | | | | | |
|---|---|---|---|---|---|
| **5** | **Pre-task # 4:** Prepare for a webinar by proposing topics of conversation and asking for opinions.<br>In the same groups of 4 from pre-task 2 (BRs), Ss take turns proposing a topic of conversation using the conversation builders from pre-task 1 and the technologies from pre-task 3.<br>ATs read conversation builders and highlight rising and falling intonation. | **Key Language for task**<br>Proposing a Topic and Eliciting Opinions<br>Have you heard about…?<br>What do you think of…?<br>What's your take on...?<br><br>**Giving Opinions**<br>I'd say that…<br>For me, … | Proposing a topic<br>Eliciting and giving opinions | S<br>L | 15 mins |
| **6** | **Task:** In groups of 3, Ss maintain a formal conversation at a webinar for 6 minutes.<br>**Planning:** T encourages Ss to refer to the strategies, conversation builders, and technologies from previous tasks. | **Key Language for task**<br>Introducing oneself, proposing a topic**,** agreeing and disagreeing**,** exchanging opinions, asking for repetition and confirmation (if necessary)<br><br>**E.g.:**<br>Hi, / Hello, I'm… | Using conversation starters<br>Proposing topics<br>Exchanging opinions | R<br>W<br>S<br>L | 15 mins for instructions and conversations |

| | | | | | |
|---|---|---|---|---|---|
| | Before the conversation, the self-assessment form is projected for Ss to consider during their conversation. | Nice to meet you (too).<br>*Did you say…?*<br>*Am I pronouncing your name correctly?*<br>*Have you heard of…?*<br>*What's your take on…?*<br>*I'd say…*<br>*For me…*<br>*I agree. / Definitely. /Absolutely.*<br>*I see your point, but…*<br>*I see it differently.*<br>*Can you please repeat?*<br>*Can you please repeat the part about…?* | Agreeing and disagreeing<br>Requesting repetition | | |
| **7** | **Post-task 1: Assessment**<br>Ss complete the self-assessment (Handout 2) by checking the small talk strategies they used or did not use during their conversations. | (Task is completed individually and silently) | Self-assessment | R<br>W | 10mins |
| | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| **8** | **Post-task 2: Language Focus**<br>**A. Analysis**: Five questions from previous pre-tasks are projected. Ss compare statement and question formation for 5 minutes with a partner.<br>**B.** The use and structure of Wh- and Yes/No questions are explained and discussed. Emphasis is placed on the use of auxiliary verbs and word order to signal questions. Intonation (rising or falling) is explained.<br>**Practice:** Ss formulate accurate questions from segments (shown in the PPT presentation) by applying correct word order. T prompts Ss to use arrows to indicate rising or falling intonation. T asks individual Ss to share answers and praises or corrects intonation as necessary. | **Key Language for task**<br>Comparing<br><br>**E.g.:**<br>*I think questions are similar to statements because they both…*<br><br>*I think they are different because…* | Analyzing / Comparing | W<br>L<br>S | 15mins |

**Abbreviations:** T = teacher ATs = assistant teacher, S(s) = student(s), L =listening S =speaking R =reading W =writing
**Others**: BRs =breakout rooms

*Note*: Students will receive an individual document (this document is the master).

## Student 1

**Instructions:**

**A)** Read the strategy with your number silently, and answer the two questions. Prepare to share the strategy with your group by using your own words.

Questions:

a) What is the strategy about?

b) According to the strategy, what can you do to be successful in a formal conversation?

### Strategies for Formal Conversations

1. As you prepare for a conference or workshop, come up with three current engineering topics to talk about as well as some questions that will get others talking.

*come up with – think of*

2.

3.

4.

**B)** Starting with Student 1, share your strategies. Do not read it—summarize it in your own words.

As you listen, write down your classmates' strategies to complete the list of four. Ask for repetition if necessary.

*Useful language:* *This strategy is about… / You can… / For example…*

*Can you please repeat? / Can you please repeat the part about…?*

*Strategies taken and adapted from https://edition.cnn.com/2005/US/Careers/03/03/small.talk/index.html*

# Student 2

**Instructions:**

**A)** Read the strategy with your number silently, and answer the two questions. Prepare to share the strategy with your group by using your own words.

Questions:

a) What is the strategy about?

b) According to the strategy, what can you do to be successful in a formal conversation?

| **Strategies for Formal Conversations** |
|---|
| 1. |
| 2. Use conversation builders to propose a topic or ask for an opinion. You can try "What do you think of ...?" "Have you heard about ...?" "What is your take on ...?" Stay away from negative or personal topics. |
| 3. |
| 4. |

**B)** Starting with Student 1, share your strategies. Do not read it—summarize it in your own words.

As you listen, write down your classmates' strategies to complete the list of four. Ask for repetition if necessary.

*Useful language:* *This strategy is about… / You can… / For example…*

*Can you please repeat? / Can you please repeat the part about…?*

*Strategies taken and adapted from https://edition.cnn.com/2005/US/Careers/03/03/small.talk/index.html*

# Student 3

**Instructions:**

**A)** Read the strategy with your number silently, and answer the two questions. Prepare to share the strategy with your group by using your own words.

Questions:

a) What is the strategy about?

b) According to the strategy, what can you do to be successful in a formal conversation?

## Strategies for Formal Conversations

1.

2.

3. Remember names by using them frequently. If the name is hard to pronounce, ask for confirmation "Did you say ____?" "Am I pronouncing your name correctly?"

4.

**B)** Starting with Student 1, share your strategies. Do not read it—summarize it in your own words.

As you listen, write down your classmates' strategies to complete the list of four. Ask for repetition if necessary.

*Useful language:* *This strategy is about… / You can… / For example…*

*Can you please repeat? / Can you please repeat the part about…?*

*Strategies taken and adapted from https://edition.cnn.com/2005/US/Careers/03/03/small.talk/index.html*

# Student 4

**Instructions:**

**A)** Read the strategy with your number silently, and answer the two questions. Prepare to share the strategy with your group by using your own words.

Questions:

a) What is the strategy about?

b) According to the strategy, what can you do to be successful in a formal conversation?

| **Strategies for Formal Conversations** |
| --- |
| 1. |
| 2. |
| 3. |
| 4. Stay focused on your conversational partner. Maintain eye contact. Never look around the room or at your cellphone while they are talking to you. |

**B)** Starting with Student 1, share your strategies. Do not read it—summarize it in your own words.

As you listen, write down your classmates' strategies to complete the list of four. Ask for repetition if necessary.

*Useful language:* *This strategy is about… / You can… / For example…*

*Can you please repeat? / Can you please repeat the part about…?*

*Strategies taken and adapted from https://edition.cnn.com/2005/US/Careers/03/03/small.talk/index.html*

***Self-Assessment: Maintaining a Formal Conversation***

**Instructions (Part A):** Assess your performance by typing an X in the Yes or No column for each action. If you didn't do one of the actions because it was not necessary (like disagreeing or asking for repetition), then mark "N/A."

| ***During the conversation, I was able to…*** | Yes | No | N/A |
|---|---|---|---|
| introduce myself | | | |
| propose an appropriate topic of conversation about engineering | | | |
| ask for opinions about an engineering technology | | | |
| agree | | | |
| politely disagree | | | |
| ask for repetition | | | |
| focus on my conversational partners (not look at my cellphone or websites) | | | |
| use the other people's names | | | |

**Part B:** Look at the "No" or "N/A" column and decide one action you would like to continue to practice. Write it below:

***One thing I would like to continue to practice:***

_____

**University of Costa Rica** **Lesson Plan # 2**

Master's Program in TEFL Student teacher: Carlos González Alvarado

Course logo and name: Assembling Communication Assistant/s: Kelsey Peterson / Fanny Maroto

González, Maroto, & Peterson Unit # **2** Title of Unit: **Building Connections**

**Unit Goal:** By the end of the unit, students will be able to determine the quality and suitability of materials and components for different projects by identifying their properties, describing their advantages and disadvantages, and requesting further information about specific features.

**General Objective:** At the end of the lesson, students will be able to successfully describe characteristics of different types of materials/components used for projects or products by giving a short presentation.

**Specific Objectives:** by the end of this lesson, students will be able to…

1. Accurately identify basic properties of aluminum by guessing about true or false statements in small groups.
2. Successfully recognize criteria to describe metals/capacitors by matching concepts and definitions.
3. Properly discuss questions about properties of metals/capacitors by answering questions in pairs.
4. Adequately compare properties of metals/capacitors by completing a chart in pairs. (pretask3)

5. Successfully describe three properties of metals/capacitors by giving a short presentation in small groups. (Main Task).
6. Briefly mention possible applications for metals/capacitors by using appropriate vocabulary.

| Obj | Procedures | Language | Strategies | Skills | Time |
|---|---|---|---|---|---|
| **1** | **Warm-up:** Using Handout 1 and working in groups, ss read a series of statements related to aluminum. Ss discuss and mark each st as true or false. **Assessment:** T and ATs monitor Ss progress and elicit answers in a general revision. **Materials.** Handout1 (Word) | **Procedural**: What do you think about this one? Do you agree? / As far as I know Aluminum is/is not; Aluminum has / doesn't have. / I'm (not) sure. **Real task language**: Adjectives: thermal, electrical, abundant, magnetic, poor, malleable, low. | Agreeing Disagreeing Predicting | Reading Speaking Listening | **15 min** |
| **2** | **Pre-task1:** Using handouts 2E / 2M and working in pairs, ss match concepts and definitions. ATs model procedural language and monitor progress in each group. Different group members may compare their results. | **Procedural**: This concept/definition matches…/ What do you think? I'm not sure about this/that one... / Do you know the meaning of…? **Real task**: Nouns: strength, corrosion, thermal, conductivity, workability, cost. / | Agreeing Disagreeing Inferring | Reading Speaking Listening | **20 min** |

| | | | | | |
|---|---|---|---|---|---|
| | **Assessment**: T, As, and class check answers together.**Materials:** Handouts 2E / 2M (Power Point) | Size, stability, dissipation, tolerance, leakage, current, voltage, availability. | | | |
| 3 | **Pre-task2:** Using handouts 3E / 3M and working in groups of three, ss read a series of questions related to metals and capacitors. Ss discuss and answer each question to the best of their knowledge. **Assessment:** T and Ss discuss answers to each question. **Materials:** Handouts 3E / 3M (Word) | **Procedural**: Stainless steel / Aluminum is/isn't. / I agree (disagree) with you. I'm not sure…/ As far as I know… / Yes, it is. /No, it isn't. / What is the meaning of…? **Real task:** Comparatives: stronger, lighter, softer, harder, higher, lower, better, cheaper, smaller, larger, more stable, more resistant. | Agreeing Disagreeing Predicting | Reading Speaking Listening Writing | **20 min** |
| 4 | **Pre-task3:** Using handouts 4E / 4M and working in groups of three, Ss complete a chart with different metals and capacitors. | **Procedural**: What's the [property] for [material]. / I agree / disagree. / This capacitor is/isn't… / [Property] in [capacitor] | | Reading | **20 min** |

| | | | | | |
|---|---|---|---|---|---|
| | Then, groups are rearranged, and answers are compared.<br>**Assessment:** ATs check answers with the whole group.<br>**Materials:** Worksheets 4E / 4M (Word) | is…? / Does this capacitor have…? I'm not sure…/ Is [material] less/more…? Yes, it is. / No, it isn't. / What is the meaning of…?<br><br>**Real task language** (Size, Temperature Stability, Dissipation Voltage Tolerance, Leakage Current, Voltage Range. Availability) Cost. / Strength, Strength to weight, Corrosion resistance, Electrical/Thermal conductivity, Thermal properties/ Workability. | Contrasting<br><br>Inferring | Speaking<br>Listening<br>Writing | |
| **5** | **Task:** Class is divided into four groups. Using handout 5E/ 5M, each group prepares a brief presentation to describe a particular metal or capacitor. Each member of the group must describe at least one property/feature. (15 min) Then, groups are paired, and they present each metal/capacitor to each other. ATs and T model interaction and expected performance. (15 min) Ats monitor progress, provide feedback, and answer questions. | **Procedural:** The purpose of this presentation is to describe...[Property] refers to... / Some important properties in [metal] are... Some possible applications are…/ In terms of [property], this metal…/ [Metal] can be used in.<br>**Real task Language:** Temperature stability is/isn't stable / Dissipation in aluminum capacitors is/isn't / high / low / [type] capacitors are expensive / inexpensive. / [Metal] is/isn't very resistant / [Metal] is isn't | Describing<br><br>Explaining<br><br>Paraphrasing | Reading<br>Speaking<br>Listening | **30 min** |

| | | | | | |
|---|---|---|---|---|---|
| | **Assessment:** T and ATs listen to each group presentation and give feedback.<br><br>Materials: Handouts 5E / 5M (PDF) | a good conductor because.../ This metal is hard / soft / easy to work with. | | | |
| **6** | **Post - Task**: In pairs, Ss brainstorm about possible applications for metals/capacitors for different purposes. Ss take notes on a word document while T and ATs monitor progress. Then, ss share their ideas with the class.<br>**Materials:** The following links can be used as reference:<br>Electrolytic Capacitors / Stainless Steel / Aluminum<br><br>Assessment: T and ATs listen to each S's idea. | **Procedural:** What do you know about…? / Can [metal/capacitor] be used in…/ As far as I know… / Some people use [metal/capacitor] for…/ You're right / I don't think so…<br>**Real task Language:** instruments, containers, products, industries (construction, medical, transportation). Power supply circuits / Insulating materials / Audio amplification / filtering applications / | Searching<br><br>Inferring<br><br>Asking questions | Reading<br>Speaking<br>Listening<br>Writing | **20 min** |

# Unit 2: Building Connections

Handout 1

**Instructions:** Read the statements below with your group and decide whether they are true or false.

1. The name Aluminum comes from the Latin word “alum”, meaning bitter salt. **[ ]**
2. Aluminum was discovered in 1825. **[ ]**
3. Aluminum is the 23rd element of the periodic table. **[ ]**
4. Aluminum has a low thermal conductivity. **[ ]**
5. Aluminum is a poor electrical conductor. **[ ]**
6. Aluminum is the most abundant metal on the Earth crust. **[ ]**
7. Aluminum can accumulate in the body. **[ ]**
8. Aluminum is magnetic. **[ ]**
9. Aluminum is the second most malleable metal. **[ ]**
10. As a conductor, Aluminum is better than copper. **[ ]**

| **Useful Language** | |
|---|---|
| What do you think about this one? | I agree / disagree with you. |
| I’m not sure… | I think Aluminum is / isn’t |
| Aluminum has/ doesn’t have | As far as I know… |

Source:: https://www.rsc.org/periodic-table/element/13/aluminiumCreated by: Carlos González Alvarado, 2020

# Unit 2: Building Connections

## Handout 1 **ANSWER KEY**

1. The name Aluminum comes from the Latin word “alum”, meaning bitter salt. **[ T ]**

2. Aluminum was discovered in 1825. **[ T ]**

3. Aluminum is the 23rd element of the periodic table. **[ T ]**

4. Aluminum has a low thermal conductivity. **[ F ]**

5. Aluminum is a poor electrical conductor. **[ F ]**

6. Aluminum is the most abundant metal on the Earth crust. **[ T ]**

7. Aluminum can accumulate in the body. **[ T ]**

8. Aluminum is magnetic. **[ F ]**

9. Aluminum is the second most malleable metal. **[ T ]**

10. As a conductor, Aluminum is better than copper. **[ F ]**

# Unit 2: Building Connections

Handout 2M

**Instructions:** Match each of the concepts below with their corresponding definitions.

**Useful Language:**
This concept/definition matches..
Do you know the meaning of...?
I'm not sure about this/that one..
What do you think?

Strength
Corrosion
Thermal
Conductivity
Welding
Workability
Cost

| | |
|---|---|
| **1.**The characteristic or group of characteristics that determines the ease of forming a metal into desired shapes. | |
| **2.**The amount of money that you need in order to buy, make or do something. | |
| **3.**The property of matter by which heat energy is transmitted through particles in contact | |
| **4.**Deterioration of a metal by chemical or electrochemical reaction with its environment. | |
| **5.**The ability of a substance to transmit heat, light, or electricity. | |
| **6.**Properties related to the ability of steel to oppose applied forces. | |
| **7.**The process of joining two metallic workpieces by applying heat | |

Assembling Communication

Created by: Carlos González Alvarado, 2020.

# Unit 2: Building Connections

Handout 2E

**Instructions:** Match each of the concepts below with their corresponding definitions.

**Useful Language:**
This concept/definition matches..
Do you know the meaning of...?
I'm not sure about this/that one..
What do you think?

Size
Stability
Tolerance
Dissipation
Leakage Current
Voltage
Cost
Availability

| | |
|---|---|
| **1.** The total amount by which a quantity is allowed to vary. | |
| **2.**The amount of money that you need in order to buy, make or do something. | |
| **3.** Result of electrons physically making their way through the dielectric medium, around its edges or across its leads. | |
| **4.** The ratio of the energy available to the charge, expressed in volts. | |
| **5.** How large or small a thing is. | |
| **6.** The phenomenon associated with the attenuation of a propagating wave in a medium with material losses. | |
| **7.** The probability that a system is operating correctly and is available to perform list functions at the instant of time | |
| **8.** The inherent ability of the circuit to avoid internally generated oscillations. | |

Assembling Communication

Created by: Carlos González Alvarado, 2020.

# Unit 2: Building Connections

Handout 2M **ANSWER KEY**

**Instructions:** Match each of the concepts below with their corresponding definitions.

| | |
|---|---|
| **1.** The characteristic or group of characteristics that determines the ease of forming a metal into desired shapes. | Workability |
| **2.** The amount of money that you need in order to buy, make or do something. | Cost |
| **3.** The property of matter by which heat energy is transmitted through particles in contact. | Thermal |
| **4.** Deterioration of a metal by chemical or electrochemical reaction with its environment. | Corrosion |
| **5.** The ability of a substance to transmit heat, light, or electricity. | Conductivity |
| **6.** Properties related to the ability of steel to oppose applied forces. | Strength |
| **7.** The process of joining two metallic workpieces by applying heat. | Welding |

Assembling Communication

# Unit 2: Building Connections

Handout 2E **ANSWER KEY**

**Instructions:** Match each of the concepts below with their corresponding definitions.

| | |
|---|---|
| **1.** The total amount by which a quantity is allowed to vary. | Tolerance |
| **2.** The amount of money that you need in order to buy, make or do something. | Cost |
| **3.** Result of electrons physically making their way through the dielectric medium, around its edges or across its leads. | Leakage Current |
| **4.** The ratio of the energy available to the charge, expressed in volts. | Voltage |
| **5.** How large or small a thing is. | Size |
| **6.** The phenomenon associated with the attenuation of a propagating wave in a medium with material losses. | Dissipation |
| **7.** The probability that a system is operating correctly and is available to perform list functions at the instant of time. | Availability |
| **8.** The inherent ability of the circuit to avoid internally generated oscillations. | Stability |

Assembling Communication

Created by: Carlos González Alvarado, 2020.

# Unit 2: Building Connections

Handout 3M

**Instructions:** In groups, discuss and answer the following questions. Write your answers below.

**1.** Is aluminum **stronger** than stainless steel?

**[ ]**

**2.** Is stainless steel **more resistant** to corrosion than aluminum?

**[ ]**

**3.** Is aluminum **lighter** than stainless steel?

**[ ]**

**4.** Which one is a **better electrical conductor**: aluminum or stainless steel?

**[ ]**

**5.** Which one is **softer**? Which one is **harder**?

**[ ]**

**6.** Which one is a **better thermal conductor**: aluminum or stainless steel?

**[ ]**

**7.** Which one is **more expensive**: aluminum or stainless steel?

**[ ]**

| **Useful Language** | |
|---|---|
| Stainless steel / Aluminum is/isn't. | I agree / disagree with you. |
| I'm not sure… | As far as I know… |
| Yes, it is. / No, it isn't. | What is the meaning of…? |

# Unit 2: Building Connections

Handout 3M **ANSWER KEY**

**Instructions:** In groups, discuss and answer the following questions. Write your answers below.

1. Is aluminum **stronger** than stainless steel?

   **[**Stainless steel is stronger than aluminum.**]**

2. Is stainless steel **more resistant** to corrosion than aluminum?

   **[** Stainless steel more resistant than aluminum. **]**

3. Is aluminum **lighter** than stainless steel?

   **[** Aluminum is lighter than stainless steel.**]**

4. Which one is a **better electrical conductor**: aluminum or stainless steel?

   **[** Aluminum is a better electrical conductor than aluminum.**]**

5. Which one is **softer**? Which one is **harder**?

   **[** Stainless steel is harder. Aluminum is softer.**]**

6. Which one is a **better thermal conductor**: aluminum or stainless steel?

   **[** Aluminum is a better thermal conductor than stainless steel.**]**

7. Which one is **more expensive**: aluminum or stainless steel?

   **[** Stainless steel is more expensive than stainless steel **]**

# Unit 2: Building Connections

Handout 3E

**Instructions:** In groups, discuss and answer the following questions. Write your answers below.

1. Is an aluminum capacitor **smaller** than tantalum capacitor?

   [ ]

2. Is a tantalum capacitor **more stable** than an aluminum capacitor?

   [ ]

3. Does an aluminum capacitor have **higher dissipation** than a tantalum capacitor?

   [ ]

4. Which capacitor has a **lower leakage current**: aluminum or tantalum?

   [ ]

5. Which capacitor has a **larger voltage tolerance**: aluminum or tantalum?

   [ ]

6. Which capacitor has a **higher availability**: aluminum or tantalum?

   [ ]

7. Which capacitor is **cheaper**: aluminum or tantalum?

   [ ]

| **Useful Language** | |
|---|---|
| Tantalum / Aluminum capacitors are/aren't. | I agree / disagree with you. |
| I'm not sure… | As far as I know… |
| Yes, it is. / No, it isn't. | What is the meaning of…? |

# Unit 2: Building Connections

Handout 3E **ANSWER KEY**

**Instructions:** In groups, discuss and answer the following questions. Write your answers below.

1. Is an aluminum capacitor **smaller** than tantalum capacitor?

   **[** Tantalum capacitors are smaller than aluminum capacitors.**]**

2. Is a tantalum capacitor **more stable** than an aluminum capacitor?

   **[** Tantalum capacitors are more stable than aluminum capacitors.**]**

3. Does an aluminum capacitor have **higher dissipation** than a tantalum capacitor?

   **[** Aluminum capacitors have lower dissipation than tantalum capacitors.**]**

4. Which capacitor has a **lower leakage current**: aluminum or tantalum?

   **[** Aluminum capacitors have lower leakage current than tantalum capacitors**]**

5. Which capacitor has a **larger reverse voltage tolerance**: aluminum or tantalum?

   **[** Tantalum capacitors have larger reverse voltage tolerance than aluminum capacitors**]**

6. Which capacitor has a **higher availability**: aluminum or tantalum?

   **[** Aluminum capacitors have higher availability**]**

7. Which capacitor is **cheaper**: aluminum or tantalum?

   **[**Tantalum capacitors are more expensive than aluminum capacitors.**]**

# Unit 2: Building Connections

Handout 4M

**Instructions:** In groups, complete the following chart to the best of your knowledge. Then, share your answers with a different group. You may use the word bank below as reference.

## Word Bank

| | | | |
|---|---|---|---|
| **Harder** | **Good/ Excellent** | **Lighter** | **More** |
| **Higher** | **Stronger** | **Cheaper** | **Easier** |

| Properties | Aluminum | Stainless Steel |
|---|---|---|
| **Strength** | Weaker | |
| **Strength to weight** | | Heavier |
| **Corrosion resistance** | Less resistant | |
| **Electrical conductivity** | | Poor conductor |
| **Thermal conductivity** | | Poor conductor |
| **Thermal properties** | Lower temperatures | |
| **Workability** | Softer | |
| **Welding** | Harder to weld | |
| **Effect on Foods** | | Less reactive |
| **Cost** | | More expensive |

| Useful Language | |
|---|---|
| What's the [property] for [material].. | I agree / disagree with you. |
| I'm not sure… | Is [material] less/more…? |
| Yes, it is. / No, it isn't. | What is the meaning of…? |

# Unit 2: Building Connections

Handout 4M **ANSWER KEY**

| Properties | Aluminum | Stainless Steel |
|---|---|---|
| **Strength** | Weaker | Stronger |
| **Strength to weight** | Lighter | Heavier |
| **Corrosion resistance** | Less resistant | More resistant |
| **Electrical conductivity** | Excellent conductor | Poor conductor |
| **Thermal conductivity** | Good conductor | Poor conductor |
| **Thermal properties** | Lower temperatures | Higher temperatures |
| **Workability** | Softer | Harder |
| **Welding** | Harder to Weld | Easier to weld |
| **Effect on Foods** | More reactive | Less reactive |
| **Cost** | Cheaper | More expensive |

# Unit 2: Building Connections

Handout 4E

**Instructions:** In groups, complete the following chart to the best of your knowledge. Then, share your answers with a different group. You may use the word bank below as reference.

## Word Bank

| | | |
|---|---|---|
| **More** | **Lower** | **Smaller** |
| **Higher** | **Larger** | **Cheaper** |

| **Properties** | **Tantalum Capacitor** | **Aluminum Capacitor** |
|---|---|---|
| **Size** | | Larger |
| **Temperature Stability** | | Less stable |
| **Dissipation** | Lower | |
| **Reverse Voltage Tolerance** | | Smaller |
| **Leakage Current** | Higher | |
| **Voltage Range** | | Lower |
| **Availability** | Lower | |
| **Cost** | More expensive | |

| **Useful Language** | |
|---|---|
| This capacitor is/isn't… | I agree / disagree. |
| [Property] in [capacitor] is…? | As far as I know… |
| Does this capacitor have…? | What is the meaning of…? |

# Unit 2: Building Connections

Handout 4E **ANSWER KEY**

| Properties | Tantalum Capacitor | Aluminum Capacitor |
|---|---|---|
| **Size** | Smaller | Larger |
| **Temperature Stability** | More stable | Less stable |
| **Dissipation** | Lower | Higher |
| **Reverse Voltage Tolerance** | Larger | Smaller |
| **Leakage Current** | Higher | Lower |
| **Voltage Range** | Higher | Lower |
| **Availability** | Lower | Higher |
| **Cost** | Higher | Lower |

# Unit 2: Building Connections

Handout 5M


**Instructions:** In your groups (A or B), prepare a brief presentation about the metal that is assigned to you. Describe each of the elements that are requested on the table below. Each member of the group must describe at least one property.

| | |
|---|---|
| **Group A** | **Metal: Aluminum**<br><br>**Describe**<br><br>● Strength.<br>● Corrosion resistance<br>● Electrical and thermal conductivity.<br>● Workability.<br>● Cost.<br>● Describe possible applications. * |
| **Group B** | **Metal: Stainless Steel**<br><br>**Describe**<br><br>● Strength.<br>● Corrosion resistance<br>● Electrical and thermal conductivity.<br>● Workability.<br>● Cost.<br>● Describe possible applications * |

| **Useful Language** | |
|---|---|
| The purpose of this presentation is to describe... | [Property] refers to... |
| Some important properties in [metal] are... | Some possible applications are… |
| In terms of [property], this metal… | [Metal] can be used in.. |

# Unit 2: Building Connections

Handout 5E

**Instructions:** In your groups (A or B), prepare a brief presentation about the metal that is assigned to you. Describe each of the elements that are requested on the table below. Each member of the group must describe at least one feature.

| | |
|---|---|
| **Group A** | **Electrolytic Capacitor: Tantalum**<br><br>**Describe**<br><br>● Size<br>● Temperature stability<br>● Dissipation<br>● Leakage current<br>● Voltage range<br>● Cost<br>● Describe possible applications. * |
| **Group B** | **Electrolytic Capacitor: Aluminum**<br><br>**Describe**<br><br>● Size<br>● Temperature stability<br>● Dissipation<br>● Leakage current<br>● Voltage range<br>● Cost<br>● Describe possible applications. * |

| **Useful Language** | |
|---|---|
| The purpose of this presentation is to describe... | [Feature] refers to... |
| Some important features of the [capacitor] are... | Some possible applications are… |
| In terms of [features], this capacitor… | [Capacitor] can be used in.. |

### *Assessment*

As mentioned previously in the course syllabus, formative, summative, and authentic assessments will be used in this course to provide useful information for both learners and teachers. The formative assessments will provide students with information regarding their strengths; these assessments will also orient the students in terms of how they can improve their skills. Formative assessments will aid the teachers as well, by measuring to what extent the course and the student-teachers are meeting learners' needs and wants; this information will help teachers take action aimed at increasing the effectiveness of the course and their teaching. Summative assessments will evaluate how successfully students can employ the knowledge and skills learned during each unit; these will show learners to what extent they can achieve the tasks necessary for their fields. Finally, authentic assessments will be used in accordance with the task-based approach and ESP nature of the course to measure students' performance in real-world situations.

In the following sections, three sample assessment instruments are presented to evaluate student performance, the student - teachers' performance, and course effectiveness.

## Student Performance

### *Speaking Task 1 (20%)*

At the end of Unit 1 (Constructing Networks), student performance will be evaluated through an authentic assessment task carried out in pairs. This summative assessment will measure the extent to which students can apply the knowledge and skills learned during the unit to a simulated situation. Thus, it will

constitute a source of valuable feedback for the students regarding the skills, strategies, and subject matter in need of reinforcement. The following general objectives will be evaluated:

1. Successfully maintain a formal conversation about a new technology with other engineers at a webinar by using appropriate conversation starters, exchanging opinions about the technologies, and expressing agreement or disagreement.
2. Appropriately establish connections with other engineering professionals at a conference by asking about and sharing engineering interests, mentioning career goals, and exchanging contact information.

To begin, instructors will ask the students several preliminary questions in an attempt to lower the affective filter and create a welcoming atmosphere. Next, students will receive a link to a simulated situation. Given that both situations involve initiation strategies (such as politely greeting someone and introducing oneself), one student will be evaluated during situation 1, and the other will be evaluated during situation 2. The benefits of this are twofold: first, evaluators will be able to focus their full attention on one student; secondly, each student will be given the opportunity to apply the previously mentioned initiation strategies. Before they begin the assessment, students will be allowed to ask any clarifying questions in the event that something is unclear. During each role play, all three instructors will take notes on the students' performance. After the students finish role playing, an analytic rubric will be employed to assess their performance and assign a

grade. Using the rubric as a guide, instructors will reach an agreement regarding the points they will assign to each student for the five specific categories.

The following criteria will be assessed in the analytic rubric: task achievement, precision of vocabulary, accuracy of pronunciation, correct use of structure, and degree of appropriateness. In terms of the rationale for these criteria, task achievement will be assessed so that students know to what degree they can perform a task necessary in their field. Vocabulary, grammar, pronunciation, and appropriateness will be evaluated because their correct implementation is essential for task achievement and successful communication; that is to say, they are building blocks which, when used correctly, contribute to the fulfillment of the task. These five aspects will have been previously taught and practiced during the lessons.

**Speaking Task 1 - Instructor Procedure**

I. Welcome students to the exam. Ask preliminary questions to lower the affective filter.

1. How are you feeling?
2. How was your morning?
3. Are you ready for the evaluation?

II. Send students the link to situation 1 and indicate which student will be evaluated in this situation.

III. Give students time to read the instructions again silently and ask any clarifying questions.

IV. After situation 1 is finished, send students the link to situation 2. Explain that the other student will now be evaluated.

V. Thank students at the end of the exam.

**Situation 1**


You are attending a conference about sustainable practices in engineering. You would like to have a formal conversation with one of the guest speakers about some topics relevant to the conference. Begin, maintain, and end a formal conversation in 6 minutes. Use appropriate strategies to keep the conversation going.

**Situation 2**


You are at a workshop about functional materials and devices, and you want to make a professional connection with a fellow workshop participant. Greet this person and begin a conversation to learn about his or her professional interests, goals, area of engineering, etc. At the appropriate time, exchange contact information and end the conversation politely.

**Speaking Task 1 Rubrics** **Rubric 1: Situation 1***

| **Criteria** | 4 | 3 | 2 | 1 | ***Notes/Observations*** |
|---|---|---|---|---|---|
| **Task Achievement**<br><br>*(Maintaining a formal conversation) | Successfully maintains the conversation by using 4-5 strategies:<br>● proposing topics<br>● exchanging opinions<br>● agreeing and/or disagreeing<br>● focusing on partner<br>● asking for repetition and confirmation (if needed). | Successfully maintains the conversation using some of the strategies (3-4). | Somewhat maintains the conversation using strategies (3). *or*<br>3-4 strategies are used, but errors in other areas interrupt the continuity of the conversation. | Strategies are sporadic and underdeveloped, or they are insufficient in number (0-2 used). *or*<br>Errors in other areas completely hinder the continuity of the conversation. | |
| **Vocabulary Precision** | Unit vocabulary is used precisely. Few to no errors (0-2) | Vocabulary is mostly precise with isolated errors. (3) | Vocabulary contains several errors (4-5), *or*<br>Vocabulary is basic with few to no errors (0-2) | Vocabulary is too basic for the task. *or* Many errors are committed (6+). | |
| **Pronunciation Accuracy** | Correct rising and falling intonation for questions (0-1 errors). Unit vocabulary is pronounced accurately (0-2 errors). | Mostly correct intonation (2 errors). Some errors in unit vocabulary pronunciation (3-4); errors do not hinder comprehension. | Some errors in intonation (3). Some errors in the pronunciation of unit vocabulary somewhat hinder comprehension (3-4). | Many intonation errors (4+). Many errors in the pronunciation of vocabulary often hinder comprehension (5+). | |
| **Correct use of Structures** | Correct use of target structures: yes/no and wh- question formation in present tense, simple present, present continuous. (0-1 errors) | Mostly correct use of target structures (2-3 errors). | Somewhat correct use of target structures (4-5 errors). | Use of target structures is frequently incorrect (6+ errors). | |
| **Degree of Appropriateness** | Topics, tone, and register are appropriate throughout the conversation. | Topics, tone, and register are mostly appropriate. | Topics, tone, and register are somewhat appropriate. | Topics, tone, and register are not appropriate. | |

Points obtained: _____ / 20 Grade: _____%

Adapted from New York State Education Department. *Sample Assessment Rubrics* [PDF File]. http://www.nysed.gov/common/nysed/files/programs/world-languages/lotecassess.pdf

## Rubric 2: Situation 2**

| **Criteria** | 4 | 3 | 2 | 1 | ***Notes/Observations*** |
|---|---|---|---|---|---|
| **Task Achievement**<br><br>**(Establishing connections) | Successfully asks about and shares<br>● area of engineering<br>● career goals<br>● engineering interests<br><br>Successfully obtains contact information. | Somewhat successfully achieves the task, with difficulty in one of the areas in column 4. | Difficulties to achieve the task due to problems in 2 areas (see column 4). *Or* Errors in other areas hinder successful task achievement. | Difficulties to achieve the task due to problems in 3-4 areas (see column 4). *or* Errors in other areas completely hinder task achievement | |
| **Vocabulary Precision** | Unit vocabulary is used precisely. Few to no errors (0-2) | Vocabulary is mostly precise with isolated errors. (3) | Vocabulary contains several errors (4-5), *or* Vocabulary is basic with few to no errors (0-2) | Vocabulary is too basic for the task. *or* Many errors are committed (6+). | |
| **Pronunciation Accuracy** | Correct rising and falling intonation for questions (0-1 errors). Unit vocabulary is pronounced accurately (0-2 errors). | Mostly correct intonation (2 errors). Some errors in unit vocabulary pronunciation (3-4); errors do not hinder comprehension. | Some errors in intonation (3). Some errors in the pronunciation of unit vocabulary somewhat hinder comprehension (3-4). | Many intonation errors (4+). Many errors in the pronunciation of vocabulary often hinder comprehension (5+). | |
| **Correct use of Structures** | Correct use of target structures: yes/no and wh- question formation in present tense, simple present, present continuous. (0-1 errors) | Mostly correct use of target structures (2-3 errors). | Somewhat correct use of target structures (4-5 errors). | Use of target structures is frequently incorrect (6+ errors). | |
| **Degree of Appropriaten-ess** | Topics, tone, and register are appropriate throughout the conversation. | Topics, tone, and register are mostly appropriate. | Topics, tone, and register are somewhat appropriate. | Topics, tone, and register are not appropriate. | |

Points obtained: _____ / 20 Grade: _____%

Adapted from New York State Education Department. *Sample Assessment Rubrics* [PDF File]. Retrieved from http://www.nysed.gov/common/nysed/files/programs/world-languages/lotecassess

**Student-Teachers´ Performance**

Teacher performance is an important tool not only to validate the students 'opinions and perceptions towards the course, but also for the teachers to be motivated in their lessons and improve the areas that are highlighted in the performance review. As stated by Koçak (2006), "a teacher needs to know how good of a teacher s/he is or what the strong or weak sides of her/him are" (p. 800). Performance evaluations will benefit learners because like other occupations, teachers must be aware of their own weaknesses and strengths to improve their work daily. In addition, knowing that the target population of a teacher is a learner who will require their service weekly or even daily, the need for evaluating the course and the teacher's performance increases to provide learners with reliable tools and resources to receive a high-quality education. These evaluations need to be part of every curriculum since performance evaluations have proven to positively influence the teacher effectiveness "by improving teacher skill, effort, or both in ways that persist long-run" (Taylor & Tyler, 2012, p. 3630). In addition, it has been demonstrated that evaluating the teachers´ performance increases productivity over the course since they learn to analyze their work and develop skills to improve their teaching practices.

In order to evaluate the performance of the student-teachers, two evaluations will be administered to learners. The first one will be an informal assessment during the fourth week of the course. Learners will be given a question about their impression of the lessons up to that point and they will comment anonymously on a mural. The objective of this assessment is to encourage

learners to share their perceptions and feedback in a safe zone. By doing so, student-teachers will be able to effectively identify areas of improvement for future lessons and will open the door for learners to feel comfortable providing constructive feedback.

The second evaluation will consist of a formal course evaluation in which learners evaluate the lessons in terms of preparedness, strategies, and activities used in the class, the ability to promote a safe learning environment, and to what extend the course helped them improve their English skills in their specific area. To do so, students will rate each of the aspects under evaluation in a rubric. In addition, open ended questions will be added to give learners the opportunity to express their thoughts regarding overall course performance.

**Student- Teacher Performance Evaluation**

Dear student,

The purpose of this evaluation is to assess the teachers´ performance throughout the course. This evaluation will take no longer than 10 minutes. All responses provided will be treated anonymously.

Thank you for taking the time to complete this evaluation. We appreciate your comments.

1. Read the following statements. Based on your experiences in the course, select the frequency in which these statements were true.

| Criteria | Never | Rarely | Usually | Always |
|---|---|---|---|---|
| *1. Teachers have shown preparedness and organization throughout the course.* | | | | |
| *2. Teachers corrected me in a respectful manner.* | | | | |
| *3. Instructions were clear and concise.* | | | | |
| *4. Teachers promoted a safe learning environment.* | | | | |
| *5. Explanations were consistent and easy to understand.* | | | | |
| *6.Teachers demonstrated creativity and knowledge in the use of the virtual environment.* | | | | |
| 7.Time was effectively handled by the teachers. | | | | |

2. Please answer the following questions.

1. From 1 to 10 (10 being the highest), how would you evaluate the overall performance of the teachers throughout the course?

_____

_____

2. Which topic did you gain the most knowledge on? Why do you think that?

_____

_____

3. What aspects did you like the most about the course?

_____

_____

4. What improvements would you suggest?

_____

_____

5. Would you like to add any other comment?

_____

_____

**Evaluación de desempeño al docente**

Estimado/a estudiante,

El propósito de esta evaluación es valorar el rendimiento de los profesores durante el curso. Esta evaluación no le tomará más de 10 minutos. Todas las respuestas se mantendrán anónimas.

Gracias por brindarnos su tiempo para completar esta evaluación, agradecemos sus comentarios.

1. Lea las siguientes oraciones. Basado en su experiencia a lo largo del curso, seleccione la frecuencia con las que estas afirmaciones se cumplieron.

| **Criterio** | **Nunca** | **Algunas veces** | **Casi siempre** | **Siempre** |
|---|---|---|---|---|
| *1. Los profesores han demostrado preparación y organización a lo largo del curso.* | | | | |

| |
|---|
| *2. Los profesores me corrigen de a respetuosa.* |
| *3. Las instrucciones fueron claras y concisas.* |
| *4.Los profesores promovieron un ambiente de aprendizaje seguro.* |
| *5. Las explicaciones fueron concisas y fáciles de entender.* |
| *6. La creatividad de los profesores fue demostrada en el ambiente virtual.* |
| *7.El tiempo fue manejado efectivamente por los profesores.* |

2. Por favor responda las siguientes preguntas.

    1. Del 1 al 10 (siendo el 10 el más alto), ¿Cómo calificaría el desempeño de los profesores a lo largo del curso?

    _____

    _____

    2. ¿Cuál fue el tema del que aprendió más? ¿Por qué?

_____

_____

3. ¿Qué aspectos le gustaron más sobre el curso?

_____

_____

4. ¿Qué mejoras sugeriría para el curso?

_____

_____

5. ¿Algún otro comentario que le gustaría agregar?

_____

_____

**Students' Assessment of the ESP Course**

The purpose of this instrument is to collect data concerning students' perception of the course at different stages. Learners will respond to this instrument at the end of each unit. Thus, student-teachers will be provided with valuable feedback to make future adjustments. When designing a mechanism to collect feedback from learners, Brennan and Williams (2004) suggest that a mixed mechanism consisting of quantitative and qualitative feedback is advisable provide more thorough data. The authors explain that quantitative feedback "can be used to provide 'evidence' that something is going well or not so well" (p. 17) while qualitative feedback "explain why something is going well or not so well" (p.17). Following this notion, a concise yet comprehensive instrument has been designed

including room for both quantitative and qualitative responses. Learners will be asked to provide input on the helpfulness, organization, difficulty, class activities, materials, and overall enjoyment of the course up to the moment of taking the survey. By offering specific statements to each of the aforementioned themes and scales to show four levels of agreement and disagreement, participants will rate their experience while avoiding neutral middle points. It must be acknowledged that most items address quantitative information, while only the last section allows for an open-ended response. This is to avoid students from feeling overwhelmed. However, the last item does allow them to further explain any of their previous responses and to elaborate on any other issue they may consider necessary to mention.

# Course Assessment


## Dear Student,

The form below aims at providing valuable feedback for future considerations. Please, take your time to read each statement and mark the option that best describes your experience in this course. We appreciate your time and collaboration.

| **Course Usefulness** | | | | |
|---|---|---|---|---|
| **So far, this course…** | **Strongly Disagree** | **Disagree** | **Agree** | **Strongly Agree** |
| Has allowed to improve language skills. | | | | |
| Has helped me to learn and use engineering vocabulary. | | | | |
| Has taught me how to become a better language learner. | | | | |
| **Course Organization** | | | | |
| **So far, lessons in this course…** | **Strongly Disagree** | **Disagree** | **Agree** | **Strongly Agree** |
| Have been easy to follow. | | | | |
| Have a coherent structure in tasks and activities. | | | | |
| **Difficulty** | | | | |
| **So far, in this course...** | **Strongly Disagree** | **Disagree** | **Agree** | **Strongly Agree** |
| Has been more challenging than I expected. | | | | |
| Has included activities/tasks that were easy to follow. | | | | |
| **Activities, Tasks, and Materials** | | | | |
| **In this course…** | **Strongly Disagree** | **Disagree** | **Agree** | **Strongly Agree** |
| Activities have been helpful to improve communicative competences in my field. | | | | |
| Tasks have been applicable to real life tasks in my field. | | | | |
| Materials have maximized learning opportunities. | | | | |
| **Course Enjoyment** | | | | |
| **During this course...** | **Strongly Disagree** | **Disagree** | **Agree** | **Strongly Agree** |
| I have felt motivated to learn and practice. | | | | |

| | | | | |
|---|---|---|---|---|
| I have felt safe to participate actively. | | | | |
| I have had fun in different activities and tasks. | | | | |
| **Additional comments**<br>I would like my teachers to know that… | | | | |

## Evaluación del Curso

**Estimado/a estudiante,**
Este formulario tiene como propósito recopilar realimentación que será de mucho valor para futuras referencias. Por favor, lea cada postulado y marque la opción que mejor describa su experiencia. Agradecemos su tiempo y colaboración.

| **Utilidad** | | | | |
|---|---|---|---|---|
| **Hasta ahora, el curso…** | **Muy en desacuerdo** | **En desacuerdo** | **De acuerdo** | **Muy de acuerdo** |
| Me ha permitido mejorar habilidades comunicativas en Inglés. | | | | |
| Me ha permitido aprender y usar vocabulario afín a Ingeniería. | | | | |
| Me ha enseñado como ser un mejor aprendiente de la lengua. | | | | |
| **Organización** | | | | |
| **Hasta ahora, las lecciones en el curso…** | **Muy en desacuerdo** | **En desacuerdo** | **De acuerdo** | **Muy de acuerdo** |
| Han tenido una dinámica sencilla de comprender. | | | | |
| Han tenido actividades con una estructura coherente. | | | | |
| **Dificultad** | | | | |
| **Hasta ahora, el curso…** | **Muy en desacuerdo** | **En desacuerdo** | **De acuerdo** | **Muy de acuerdo** |
| Ha sido más difícil de lo que esperaba. | | | | |
| Ha incluido actividades y dinámicas fáciles de entender. | | | | |
| **Actividades y Materiales** | | | | |
| **Hasta ahora, el curso…** | **Muy en desacuerdo** | **En desacuerdo** | **De acuerdo** | **Muy de acuerdo** |

| | | | | |
|---|---|---|---|---|
| Ha incluido actividades provechosas para mejorar competencias comunicativas en mi campo de estudio. | | | | |
| Incluye actividades que reflejan actividades reales de mi campo de estudio. | | | | |
| Ha incluido materiales que maximizan las oportunidades de aprendizaje. | | | | |
| **Disfrute** | | | | |
| **Durante este curso…** | **Muy en desacuerdo** | **En desacuerdo** | **De acuerdo** | **Muy de acuerdo** |
| Me he sentido motivado a aprender y practicar el idioma. | | | | |
| Me he sentido cómodo para participar activamente. | | | | |
| He disfrutado diferentes actividades y dinámicas de clase. | | | | |
| **Comentarios adicionales**<br>Quisiera que mis profesores sepan que... | | | | |

## Chapter IV: Course Evaluation Report

Since the 1980s, major research efforts have been made to explore Task Based Language Teaching (TBLT) in English as a Foreign Language (EFL) classes. These efforts include defining TBLT and the task cycle (Richard & Rodgers, 2001), exploring second language acquisition and task types (Ellis, 2018), and determining task characteristics (Pica et al., 1993, p.19) (for a comprehensive review of TBLT research over time and the influence of various SLA theories on TBLT, see Ellis, 2018 and Robinson, 2011).

As Ellis (2018) explains, TBLT grew as a result of both findings in SLA research as well as the rise of the communicative language teaching movement (pp. xi-2). This push for meaningful communication in a second language is understandable given the influence of globalization on language teaching and learning. As Block and Cameron (2002) point out, “global communication requires not only a shared channel (like the internet or video conferencing) but also a shared *linguistic code*” (p. 1). TBLT, especially when employed in English for Specific Purposes (ESP) courses, has constituted a means to this end: it facilitates a communicatively able workforce, composed of employees who are trained to perform work tasks not only in their native languages but in English as well.

Costa Rica is one of many countries in which an English-speaking global workforce is needed. As explained by Quesada et al. (2019), English plays important economic, academic, and political roles in Costa Rica. For one, English provides students and professionals of numerous disciplines with access to updated knowledge. It is also an essential language for attracting foreign

investment. As Costa Rica's technology and knowledge industries continue to grow, so does the need for "a well-qualified English-speaking workforce" (p. 88) and, by extension, the need for communicative ESP instruction.

At the University of Costa Rica (UCR), student teachers of the Master's Program in Teaching English as a Foreign Language (MA TEFL) prepare individuals for an English-speaking professional world through a TBLT-based ESP course. This 14-week ESP course is developed and team-taught by MA TEFL graduate students and typically serves UCR staff and undergraduate students studying various disciplines (such as food technology, business administration, enterprise computing, law, and others). Populations outside of the university have also participated, such as Coast Guard officers, employees of public banks, and airport taxi drivers, to name a few (Quesada et al., 2019, pp. 94-95).

Until 2020, the MA TEFL practicum at UCR had been taught almost exclusively in face-to-face classrooms; however, at the start of the first 2020 semester, the practicum was taken online in response to the global health crisis of COVID-19. Despite the present research on technology-mediated TBLT and TBLT in the ESP classroom, there is still much to be studied regarding TBLT in the online ESP class, especially in terms of measuring course effectiveness and the effectiveness of the task cycle itself.

When researching the possible role that pre-tasks play in preparing students for main task performance, little is found. The authors are unaware of any study conducted with an online ESP student population that addresses relationships between pre-tasks and main task achievement. Numerous case

studies have evaluated TBLT implementation in ESP courses, among them Bagher Shabani and Ghasemi, 2014; Khatib and Dehghankar, 2018; and Milarisa, 2019. Nonetheless, they have typically been conducted in face-to-face classrooms and have not addressed pre-task and task cycle relationships specifically. In terms of studies which do investigate connections between pre-tasks and main tasks, two were found that centered on pre-task planning but were not conducted in a virtual environment, nor was the sample an ESP population (Ellis et al., 2019; Yuan & Ellis, 2003). As a matter of fact, the term “online” must be carefully considered when searching for information on TBLT in the online classroom, so as not to be confused with the nearly identical term “on-line.” While “online” is commonly used to refer to activities that occur using internet access, the term “on-line” has been used by some authors (Yuan & Ellis, 2003) to refer to planning that occurs during the main task as opposed to planning during the pre-task stages.

In short, there is a need for more research aimed at evaluating aspects of TBLT in the online ESP environment. If teachers are to provide the world with well-qualified English-speaking employees who can communicate across virtual channels through the shared linguistic code of English, more studies must be conducted to investigate the effect of pre-tasks on task performance in online ESP courses.

In order to add to the body of research regarding the effect of pre-tasks on task performance, this paper examines possible relationships between pre-tasks and task performance in an online ESP course for mechanical and electrical engineering students at the University of Costa Rica. Following a review of related

literature and an explanation of the methodology, student perspectives on task performance and performance results are presented and analyzed. The authors hope that the results of this research will help fill the existing research gap regarding pre-task studies in online ESP learning and teaching.

## Research Questions

To investigate the possible role of pre-tasks on task performance in the online ESP course, the following research questions were developed.

### Main research question

To what extent did the pre-tasks in an online ESP course for electrical and mechanical engineering students prepare them to carry out the main tasks of two units successfully based on target lexical item use and students' perspectives?

### Sub questions

1. How did the pre-tasks in the online ESP course prepare students to fulfill task objectives based on the ratio of target lexical items used by students in the main task?
2. How did the pre-tasks in the online ESP course prepare students to fulfill task objectives from students' perspectives?

## Literature Review

### Teaching an ESP course

The development of English for Specific Purposes (ESP) courses has increasingly become more relevant as different sectors of society demand more specialized communicative skills (Belcher, 2009; Kırkgöz & Dikilitaş, 2019) while general English courses do not satisfy these demands (Whyte, 2013). This growing demand for ESP training seems to be expanding to more fields than ever before. Belcher (2009) goes as far as to predict that in the near future there will be "as many types of ESP as there are specific learner needs and target communities that learners wish to thrive in" (p. 2). In addition to this language-teaching trend, the global health crisis caused by COVID-19 has pushed educational institutions around the world to migrate to online learning settings. Thus, research is fundamental to meet the potential issues that may emerge as ESP and online learning become more relevant worldwide. This literature review begins by exploring important issues that affect the delivery of ESP courses. Later, the connection between ESP and TBLT principles is established as suggested by different authors. Next, online learning is addressed in light of the TBLT cycle, and two final segments are dedicated to discussing notions about the role of pre-tasks and the role lexicon in task performance.

Learners' language needs are one of the factors that come into play when developing language courses. A number of authors have recognized the importance of properly assessing students' needs as one of the most pressing issues in ESP (Belcher, 2009; Basturkmen, 2010; Donesch-Jezo, 2012; Whyte,

2013; Khatib & Dehghankar, 2018; Kırkgöz & Dikilitaş, 2019). The significance of addressing students' communicative needs in different contexts is rooted in ESP from its conceptualization. For instance, Basturkmen (2010) argues that "ESP focuses on when, where, and why learners need the language either in study or workplace contexts" (p. 8). Essentially, students' needs are placed as the cornerstone of any ESP teaching practice. This means that all decisions while designing and implementing a course should always be guided by the reported needs of the target population. Similarly, Donesch-Jezo (2012) believes that the design of an ESP course "should be preceded by an analysis of the students' needs concerning their future or present occupation or their plans for the future, as well as an analysis of the language used in their target situations" (p.3). This emphasis on learners' needs is consistent with Anthony's (2015) conceptualization of ESP, which highlights "the current and/or future academic or occupational needs of learners" and "the language, skills, discourses, and genres required to address these needs" (as cited in Kırkgöz & Dikilitaş, 2019, p. 2). Hence, it is the duty of the ESP instructor to identify not only present language gaps but also potential communicative needs, which might still be oblivious to the intended ESP population. Addressing these needs properly requires a significant effort from the ESP teacher to enter unknown domains (Belcher, 2009). For this reason, another important concern in ESP is how instructors obtain an adequate understanding of the subject matter, which implies unknown domains ranging from the learners' field to the use of online settings.

Becoming sufficiently knowledgeable of the subject matter may be a common concern among potential ESP instructors. However, Dudley-Evans and St John (1998) argue that ESP learners do not expect their teachers to be experts in their areas of knowledge, but to be well-informed about “how language is used” in their fields (as cited in Belcher, 2009, p. 2). This inevitably involves investigating discourse, which Basturkmen (2010) finds time-consuming. Thus, before undertaking a course design endeavor, she recommends identifying the skills, genres, and features learners need to know and verifying the available data, which may refer to authentic samples of how language is expected to be used (p. 42). Additionally, identifying the target ESP vocabulary is of utmost importance. Coxhead (2013) outlines several ways to identify target vocabulary: consulting experts, working with specialized dictionaries, developing rating scales, and resorting to corpus linguistics (p. 117). Although these strategies can be useful to isolate key ESP vocabulary, Coxhead (2013) argues that potential misconceptions may bring difficulties. Therefore, she recommends exploring these potential misunderstandings by “asking [students about] their opinion of the meaning of a word, highlighting any misconception that arises” (p. 128). In this way, instructors can make sure that the target vocabulary is treated and assimilated both accurately and efficiently. Once skills, genres, discourse and target ESP vocabulary have been identified, they can be applied to the primary focus of ESP: the design of authentic tasks.

The important role of authentic tasks in either TBLT or ESP has been highlighted by different researchers. Belcher suggests that beyond developing

communicative competences, authentic tasks “equip students with language learning and personal problem-solving strategies” (p.9), which result in higher metacognitive awareness. A study by Khatib and Dehghankar (2018), with 60 ESP law students and 10 instructors in a university, incorporated real-life tasks rendering positive results in students’ productive skills. These favorable results from the experimental group were attributed to successful treatment and exposure to TBLT. Still, meeting all criteria for devising real-life tasks can be too difficult to achieve (Adolphs & Lin, 2011, as cited in Farhady et al., 2019). Although ESP instructors may not fully replicate a real-life task, authenticity can be increased through the use of simulations (Belcher, 2009, p. 9). Implementing role-plays and problem-solving activities are two of the alternatives suggested by the author to achieve simulations. As noted in the previous reference by Dudley-Evans and St John, what matters the most is the correct use of the target language in the specific context.

Along with authentic tasks, authentic materials must be considered in the design of an ESP course. Paltridge and Starfield (2013) observe that authentic texts are becoming more accessible as teachers and researchers only need to “turn on their computers to find these materials, including newspapers, magazines, scientific journals, news broadcasts, and lectures, all of which provide new ways for examining specific forms of language” (p. 389). This is also supported by authors who believe that technology has facilitated the access to authentic language (Farhady et al., 2019). Regarding the benefits of incorporating authentic materials, these authors suggest that these resources can also “help students’

transition from general English to ESP and make them more competent in reading and writing" (p. 78). Hence, collecting authentic materials and assuring task authenticity are necessary steps to help learners acquire the target communicative skills in ESP settings.

In short, the growing need for more specialized language learning experiences has pushed teachers and students to move towards ESP environments (see Belcher, 2009). Teaching an ESP course involves a series of challenges as well as a number of possibilities to address them. The key issue seems to be identifying and analyzing accurately both present and future communicative needs in the target population (Donesch-Jezo, 2012; Anthony, 2015). These findings ought to pave the way for the design of the ESP course. During this process, ESP instructors may be overwhelmed by the unknown technical language and subject matter contents. However, as suggested by this literature review, ESP teachers should not be concerned with becoming experts, but rather well-informed about the expected language use in real-life settings. Although replicating real-life tasks might appear too difficult, simulations could be useful to increase authenticity. Finally, gathering authentic materials can be facilitated by the emerging tools provided by technology through digital databases and other resources.

**TBLT and ESP**

Teaching an ESP course demands an appropriate method and techniques. Donesch-Jezo (2012) notes that choosing a teaching method hinges mostly on

“the students’ linguistic and communicative needs, on the specificity of the texts (discourse) used in the present and target situations, on the students’ learning methods and strategies, and on the context of the specific language teaching” (p. 4). This notion recaptures the relevance of learners’ linguistic needs in context. Thus, a language teaching methodology should be addressed which has proven to be consistent with needs analysis implementation: TBLT (Task-Based Language Teaching). As explained by Long (2015), “TBLT starts with a task-based needs analysis to identify the target tasks for a particular group of learners – what they need to be able to do in the new language” (p. 6). In other words, TBLT is clearly consistent with ESP’s most important foundations: assessing learners' needs and developing authentic tasks that reflect real-life situations. The TBLT-ESP dyad has been addressed before in various research papers (Whyte, 2013; Long, 2015; Khatib & Dehghankar, 2018). In a study with graduate French students, Whyte analyzed a number of ESP courses to determine the applicability of TBLT principles. She concluded that “while particular disciplines require specific approaches to teaching English, these approaches can be usefully defined by applying the methodological principles of TBLT” (p. 18). Hence, this approach emerges as a theoretical backbone, which supports the development of courses that address particular language needs and communicative competences (see Whyte, 2013, p. 19). Thus, supported by TBLT principles, ESP could grow exponentially in terms of effectiveness and practicality. Khatib and Dehghankar agreed with this conclusion when they recognized TBLT as “one of the most effective methods applied to ESP courses” (pp. 5-6). Considering these research-

based assumptions, the TBTL-ESP dyad becomes fundamental to address the growing language needs in more diverse learner populations. Long (2015) makes a crucial point when he observes that learning a language is an endeavor that demands not only a significant amount of time and energy from the students but also requires a financial effort from their parents or their employers. Consequently, he argues, “more and more learners, especially college students and young adults, are reluctant to accept courses that were clearly not designed to meet their needs” (p. 11), which is consistent with Whyte’s conclusion that traditional English courses do not meet language needs from specific or specialized learners. This is a revealing reflection that demands careful attention when designing ESP courses in order to guarantee the most efficient use of these resources, as suggested by Long (2015). Therefore, a transition in language learning that integrates TBLT and ESP principles needs to take place. However, there seems to be a shortage of research in these areas. Khatib and Dehghankar, (2018) have noted that “very few studies in the literature dealt with the impact of TBLT on ESP learners’ productive skills; most of the research corpus available dealt with such receptive skills as reading” (p. 6). On a similar note, Kırkgöz and Dikilitaş (2019), claim that innovative practices in ESP do not compensate for the lack of research. They argue that “there remains a shortage of relevant, published research, particularly studies with sound theoretical and methodological bases” (p. 3). Thus, more research studies that address both ESP and TBLT are still necessary to reach further conclusions that shed light on the impact of these teaching principles in learners with specific language needs.

**TBLT and Online Learning**

A task can be considered as the central unit of TBLT. Branden's (2006) definition of a task is used here to provide proper contextualization. He describes a task as "an activity in which a person engages in order to attain an objective, and which necessitates the use of language" (p.4). This may be perceived as an overly simple definition, but it is straightforward as well as effective to synthesize the essence of a task. To offer more insights into TBLT, Branden notes that tasks, by generating real-life scenarios, elicit favorable communicative sequences where learners negotiate meaning. These additional elements allow us to gain a better understanding of tasks in a TBLT approach. The first element is "communicative behavior" which results in negotiation of meaning. This means that learners build meaning by exchanging opinions, clarifying, and asking for repetition. The second element is real-life language. Essentially, learners are provided with authentic linguistic settings when performing the task. These two elements properly condense the focus of a task in TBLT. Thus, a task focus could be defined as entailing previously established language functions and skills that encourage negotiation of meaning while interacting in a real-life communicative context.

Adding an online environment to the equation of TBLT brings a number of variables that influence task performance. A number of researchers have acknowledged the challenges of implementing TBLT in an online environment (Lai & Li, 2011; Iveson, 2015; Baralt & Morcillo, 2017). Iveson (2015) has identified issues concerning challenges that result from using a TBLT approach in an online setting. He identifies issues concerning "student participation, familiarity and

acceptance with TBLT principles and related methodologies, and the position of grammar teaching and a focus on form in the task cycle" (p. 281). These factors do not seem to have a clear relationship with online learning, but with a lack of familiarity with the principles of TBLT, as acknowledged by Iveson. Still, the relationship could be explained by the inconvenient blend of two potentially unknown domains for most students: TBLT and online platforms. Consequently, not only do students have to adapt to an unfamiliar cycle, but also, they are expected to perform in a platform that brings additional technical challenges. Lai and Li (2011) also provide some substantial insights regarding the challenges of technology-mediated TBLT:

> Despite the great potential technology brings to TBLT, it also introduces a whole suite of issues for both the learners and the teachers that complicates the nature of TBLT. Thus, implementing TBLT in technology-mediated environments presents various challenges. Using technology for language learning requires that learners possess many computer skills. When using technology to guide instruction, teachers must take on new pedagogical roles. (p. 509)

Two factors mentioned by Lai and Li are paramount: lack of computer skills and new pedagogical roles. It would be a serious mistake to assume that having access to a computer equals having a degree of literacy in online learning. Similarly, it would be wrong to assume that language teachers are prepared to take on an online setting without proper training. This can be better explained in

Baralt and Morcillo's (2017) words, when they argue that "Implementing task-based methodology during real-time, video-based interaction is fundamentally different from traditional, face-to-face interaction" (p. 28). To put it differently, the difficulty arises as soon as it is assumed that what has been done in face-to-face classes can be equally implemented in online environments. Nielson et al. (2009) also observed that teaching online "language courses cannot just be a "translation of an equivalent face-to-face course" (as cited by Baralt & Morcillo, p. 34). To explain this discrepancy, the authors suggest that the amount of time devoted to technical features and the difficulties to socialize in online settings may cause a mismatch between what teachers and students expect. For this reason, adequate training for both instructors and learners is recommended when developing a TBLT course in online settings.

Provided that teachers and students have the necessary conditions, technology can provide a range of benefits and alternatives. In their paper, Doughty and Long (2003) studied the implementation of TBLT principles in technology-mediated settings. They concluded that network technology available at that time brings additional benefits regarding access to different types of materials. This is in agreement with Lai and Li's (2011) review, in which they observe that technology "enlarges the number of venues and resources for task performance and allows for the possibility of freer and less structured tasks" (p. 501). Therefore, access to these innovations has the potential of diminishing initial difficulties by providing further flexibility (for example, through different means of task performance) that cannot be found in the traditional classroom. However,

these opportunities can be heavily influenced by the mode of interaction. Online learning generally implies a balance of synchronous and asynchronous work, but it may also rely on just one mode of interaction. Sotillo (2000) investigated the implications of synchronous and asynchronous interaction in a computer-mediated learning context. She found that “discourse functions in asynchronous discussions were more constrained than those found in synchronous discussions and similar to the question-response-evaluation sequence of the traditional language classroom” (p. 77). These conclusions have great relevance as there may be implications for students’ productions. For instance, as explained by Sotillo, learners’ language was more complex in asynchronous settings as they had more time “to focus on both form and meaning to a greater extent than when they are engaged in rapid fire exchanges and socializing via synchronous discussions” (p. 98). Provided that students have enough time to elaborate, their language choices may favor more complex vocabulary and structures. Thus, ESP instructors need to consider the complexity of target language that will be required of students before making decisions about time and mode of interaction. For instance, if the target vocabulary seems to be familiar enough, synchronous work may offer the necessary conditions for language production. In contrast, very complex target language may demand longer periods of time so that learners have the chance to assimilate it and eventually, use it. Even though this study has evident limitations in terms of participation, selection, and teacher interventions, as acknowledged by Sotillo, it provides valuable notions, namely about the use of computer-mediated settings in language learning. Other helpful insights are provided by Van der Zwaard and

Bannink (2014), who found that learners may “prioritize avoiding loss of face over task completion in video-based interaction, which can negatively affect successful negotiation of meaning” (as cited in Baralt & Morcillo, 2017, p. 34). Consequently, TBLT teachers must consider both possibilities when designing communicative tasks in synchronous settings: learners may be more spontaneous but less accurate while in other cases, they may be intimidated by video interaction. Regardless of mixed results in research, Lai and Li (2011) believe that there is still “strong evidence that technology helps enhance the quality of language production during task performance” (p. 503). Thus, all learner-related and technology-related factors ought to be taken into account while making the most of the available online tools. As explained by Sotillo (2000), these innovations “facilitate massive information exchange, and encourage learner autonomy” and help “instructors who must use them creatively to maximize the students' language learning experience” (p. 99). Hence, the benefits seem to outweigh the challenges that may arise. As put by Lai and Li (2011), the advantages of incorporating technology go beyond the classroom experience by facilitating and enhancing “TBLT both in terms of its effectiveness and its contribution to our understanding of TBLT” (p. 499). For this reason, further research is of utmost importance to gain greater understanding of technology-mediated TBLT as well as emerging issues in online learning.

**Addressing Pre-Tasks in TBLT**

As previously discussed in Chapter II, TBLT is generally implemented in three main steps: pre-task, main-task, and post-task. The research questions in

this study are mainly concerned with the role of pre-tasks. Therefore, this initial step in the TBLT cycle is of greater importance in this last segment of the literature review. Several authors have referred to the role of pre-tasks in the TBLT cycle (Prabhu, 1987; Nunan, 2004; Ellis, 2009; Ellis 2018; Farrokhi et al., 2012). Focusing on the pre-task stage, Farrokhi et al. (2012) studied the impact of pre-task activities on the listening performance of EFL Iranian learners. They concluded that pre-tasks can enhance learners' performance in listening comprehension. Prabhu (1987) addresses the context of pre-tasks as one in which "difficulties which learners may have in understanding the nature of the activity –seeing what information is given, what needs to be done, and what constraints apply – are revealed" (p. 54). This is an opportunity for the TBLT instructor to assess the learners' potential needs before taking on the main task. Similarly, Nunan (2004) finds the pre-task as a schema-building stage which "orients the learners to the task, generates interest, and rehearses essential language that will be required to complete the task" (p. 128). These conclusions suggest that the pre-tasks have a strong influence on the outcome of the main task by generating the necessary conditions and language that will eventually facilitate the students' performance. In contrast, Ellis (2009) seems to think of pre-tasks as an optional stage when he claims that "A task-based lesson can involve three phases (the pre-task phase, the main task phase, and the post-task phase), although only one of these (the main task phase) is obligatory" (p. 224). This should not be interpreted as an attempt to belittle the role of the pre-task but could be perceived as an effort to remark the relevance of the main task. Ellis (2009)

does find the pre-tasks as suitable opportunities to teach language explicitly (p. 236). Prabhu disagrees with this notion as he claims that “the term ‘pre-task’ has been mistakenly understood as involving direct teaching (i.e., presentation and practice) of the concepts as well as the items of language needed for the task” (p. 43). He argues that pre-tasks allow learners to rehearse “publicly” (p. 54), which might involve the assistance of the teacher and peers before performing on their own (without any further help). This is consistent with Nunan’s notion of pre-tasks as preparation opportunities when he observes that “The pre-task rehearses this language in a controlled and then slightly less controlled way” (Nunan, 2004, p. 130). Thus, the TBLT instructor would have a more supportive than leading role as the cycle progresses from the pre-task to the main task.

More recently, Ellis (2018) has referred to pre-task planning stages, which could be interpreted as close in meaning to pre-task activities. He distinguishes two types of pre-task planning: rehearsal or task repetition and strategic planning. In regard to task repetition, Ellis (2018) suggests that repeating a task several times can render even better results in fluency and complexity (p. 96). Thus, instructors could increase the number of times a task is repeated depending on the complexity of the language that is going to be addressed. Nevertheless, when it comes to accuracy, an additional action is recommended. Ellis (2018) observes a potential impact on accuracy by making students aware of the task repetition techniques: “It seems likely that if they are told, they will pay greater attention to the linguistic encoding of what they want to say” (p. 92). This suggests that telling students about the upcoming repetition of a task may guide them to focus on form

more effectively. In relation to strategic planning, benefits in fluency and accuracy have also been found. Ellis (2018) concludes that “strategic planning clearly benefits fluency but results are more mixed where complexity and accuracy are concerned, possibly because there is a trade-off in these two aspects” (p. 96). Therefore, a relevant implication for instructors when implementing strategic planning in pre-task stages is that learners may favor either fluency and complexity over accuracy. Finally, Ellis (2018) addresses a crucial learning factor that may influence pre-task planning and task performance: working memory. He argues that considering the limitations in working memory “learners experience problems in carrying out conceptualization, formulation and articulation in parallel. Strategic planning eases these problems because learners will already have an idea of what they want to say and how to say it” (Ellis, 2018, p. 100). Thus, the influence of this variable should not be overlooked by instructors when designing pre-task planning stages.

Beyond the studies cited in this section, there seems to be a significant gap in literature that explicitly addresses the role of pre-tasks in TBLT. Additionally, when online learning is included in the equation, the sources are even more limited. Baralt and Morcillo (2017) briefly discussed the role of instructions when addressing pre-tasks in online settings. They observed that “Fundamental as well for the pre-task phase are detailed task instructions. The instructions should also include information about the technical aspects of the online meeting platform” (p. 37). Thus, pre-tasks may involve more decisions in terms of teachers’ instructions than any other stages of the TBLT cycle, especially in online settings. These

decisions may involve not only how specialized language will be introduced but also how students will interact with it and among themselves in order to activate schema, negotiate meaning, and prepare for the main task.

In light of the previous considerations, further research is necessary to gain greater insights into the role of pre-tasks in TBLT. Future studies could address the influence of pre-task design in different contexts and scenarios. More specifically, the role of pre-tasks in the context of ESP and online settings could prove useful to meet particular language needs more effectively. For instance, a theoretically-supported design of pre-tasks to address the specific needs of a particular ESP population, within a TBLT methodology, can result in better performance and fulfillment of the course objectives. The present study also deals with ESP and online learning, which makes its implications potentially significant to the field of research on the role of pre-tasks in virtually-mediated TBLT.

**Addressing lexicon in TBLT**

Vocabulary acquisition has been a recurrent theme in TBLT research, but the role of lexicon in pre-task in relation to main-task achievement does not seem to have a significant body of literature. Skehan (2003) made a reference to lexical items when measuring task performance. He referred to the “token-ratio,” which involves a conventional method that tallies the number of different words in a text produced by a student (p. 8). However, this measurement does not give any insights into target lexical items that are introduced in pre-tasks and their effects on main task performance. Even though no study was found on this matter, TBLT has

been observed to offer significant gains in vocabulary for students (Sarani & Sahebi, 2012; Elizondo et al., 2019). In a study with ESP Iranian learners from Birjand University, Sarani and Sahebi (2012) found that “ESP learners who have been taught vocabulary through task-based language teaching outperformed those learners who have been taught vocabulary through traditional approach” (p. 124). When explaining their findings, the authors argue that a number of factors related to TBLT principles may have played a role in the students’ performance. The researchers observed that “tasks, authentic materials, learner-centered communication, negotiation of meaning, integration of new and existing knowledge” (Sarani and Sahebi, 2012, p. 124) were some of the variables that may have influenced better results in vocabulary acquisition in contrast with learners that were exposed to the traditional method, which they argue lacked the interactive and collaborative nature of TBLT (p. 125). These results could suggest that TBLT stages provide more suitable and beneficial conditions for ESP students to process new lexical items.

In a more recent study, Elizondo et al. (2019) observed the impact that a TBLT approach had on students’ use of ESP vocabulary and grammar structures. In regards to lexicon, the researchers explored vocabulary gains in eleven mechanical engineering students from the University of Costa Rica. The authors’ conclusion is consistent with Sarani and Sahebi’s findings: TBLT has a positive effect on students’ use of vocabulary. From this study, some implications worth mentioning were drawn by the researchers. Elizondo et al. (2019) discussed the importance of authentic texts as a key factor “to make learners retain vocabulary

items or grammatical structures, these are to be presented contextually, meaningfully, and repeatedly, but most importantly, realistically" (p. 81). Therefore, the use of authentic texts seems to aid ESP students in making more meaningful connections by interacting with contents that are tailored to their needs, wants, and lacks. This appears to render better results in lexical acquisition. The researchers also refer to external circumstances (in a similar way as Sarani and Sahebi) that have an impact on the use of lexical items. They suggest that variables known as "Cinderella factors" such as "personality, motivation, attitude, aptitude, preferred learning styles, and intelligence can hinder students' language learning process in significant ways" (Elizondo et al., 2019, p. 82). Differently from Sarani and Sahebi's factors, these variables are not linked to TBLT principles. However, these are issues that should not be overlooked when measuring performance and use of target lexical items. As can be noticed, literature that addresses the role of lexical items in TBLT and in the context of pre-task and main-task stages is scarce, which makes this study more meaningful for TBLT instructors and researchers.

This literature review explored different areas of research that are relevant to the research questions in this research paper, which are concerned with how pre-tasks, in an ESP context, prepared learners to fulfill task objectives based on their performance and perception. With respect to the field of ESP, the increasing need to address more specific language needs (Belcher, 2009) was established and linked to the opportunities provided by TBLT principles (Long, 2015). Findings in ESP and TBLT were discussed to provide context for the type of course that was designed in this study. The shortage of research regarding ESP and TBLT

(Khatib & Dehghankar, 2018; Kırkgöz & Dikilitaş, 2019) was also explored. Additionally, considering the virtual environment in which this course took place, TBLT and online learning were addressed. It was observed that online settings affect task performance due to a lack of computer skills (Lai & Li, 2011), losing-face factors (Zward & Bannink, 2014), and unknown domains, namely an unfamiliar teaching approach and medium. In addition, the benefits of technology were pointed out as they can ease the challenges that may emerge during online interaction (Sotillo, 2000; Doughty & Long, 2003; Lai & Li, 2011). Also, authors that have referred to the role of pre-tasks were consulted rendering the conclusion that this stage can influence students' performance in the main task. Pre-tasks reveal potential difficulties timely (Prabhu, 1987) so that ESP instructors make decisions on-the-fly. Also, pre-tasks can raise interest in learners while providing orientation (Nunan, 2004) and allow explicit teaching of language (Ellis, 2009). Later, two different ways of preparing students for a task were addressed: task repetition and strategic planning. Evidence from both approaches suggests that students may benefit mostly in fluency and complexity. Finally, the connection between TBLT and the acquisition of target lexical items was addressed (Skehan, 2003; Sarani & Sahebi, 2012; Elizondo et al., 2019). Even when the body of research is limited, it is suggested that TBLT principles have a positive effect on vocabulary acquisition and render better results in contrast with traditional methods. Hence, the connections between ESP, TBLT, online learning, pre-tasks, and lexicon are presented in a study that could give valuable insights to future researchers and ignite further developments in these fields.

## Method

A mixed methods approach was conducted with the purpose of understanding the extent to which pre-tasks in the ESP course for electrical and mechanical engineering students in a virtual context prepared them to successfully fulfill the objectives of the main tasks. According to Morgan (1998), the main reason why researchers decide to use the mixed methods approach is that “by combining the qualitative and quantitative methods, one can bring the strengths of each method together in the same project” (p. 362). By doing so, researchers can categorize the information received as qualitative or quantitative to maximize their contributions to the project. For the purpose of this study, the researchers followed the recommendation by Ambrose et al. (2005) to examine qualitative data to understand the meaning students gave to the events and situations in which they were involved and to identify how this context influenced their actions (p. 807). Similarly, the researchers of this study considered Tewksbury’s (2009) claim that this method “focuses on the meanings, traits and defining characteristics of events, people, interactions, settings/cultures and experience” (p. 239). At the same time, quantitative data was collected with the purpose of describing the students’ performance according to selected criteria such as surveys and pre and post-tests, since as Amelink et al. (2009) state, these “results are interpreted to determine the probability that the conclusions found among the sample can be replicated within the larger population” (p.54).

Using the mixed method approach allowed the researchers to organize the data and to gather the information focusing on two perspectives relevant to the study. The first perspective relied on qualitative analysis to understand the students´ motivations towards their responses and perceptions regarding the relationship between pre-tasks and the successful achievement of the main task. The quantitative method served the purpose of gathering statistics that provided an in-depth analysis of the data.

Moreover, oral tests were conducted at the end of each unit as summative assessments as a requirement to successfully complete the course. As it is known, both summative and formative assessments are essential when gathering information. For this reason, the oral assessments were based on the main tasks of each lesson as formative assessments with the purpose of “providing information to be used as feedback to modify teaching and learning activities” (Dixson and Worrell, 2016, p. 154). At the end, the assessments, in addition to the instructors’ feedback, guided students to overcome the gap between what was expected and their performance. Once the pre-tasks and main tasks of each lesson were completed as part of the instruction, the summative assessment took place to measure students’ performance and improvement. Students were paired up and were given a situation to be developed as their assessment. Then, they were encouraged to correct the mistakes the teachers provided as feedback so that they could receive their grades. It is important to mention that these results were omitted from the study because the recordings of the assessments that were

aimed to be analyzed were lost due to technological issues, compromising the results if incomplete information was used.

The next section will provide more detail regarding the context of the study and the participants. More specifically, the instruments are presented which were designed to demonstrate how the data was gathered over an eight-week period (16 hours total) using video recordings, three self-assessment instruments, and a focus group.

## Context

This study was conducted as part of the teaching practicum assigned to students of the Master's Program in Teaching English as a Foreign Language. The practicum project consisted of delivering a 14-week elective course of English for Specific Purposes to mechanical and electrical engineering students at the University of Costa Rica. The engineering students decided to participate in the course with the sole objective of improving their English skills in their fields. The course was taught virtually every Monday from 5:00 P.M to 6:50 P.M.

## Participants

The participants consisted of 21 undergraduate students of the mechanical and electrical engineering majors. While 21 students started the course in August 2020, only 12, two mechanical and ten electrical engineering students, successfully completed the course and were part of the data collection process. Before the ESP course began, a thorough needs analysis process and two

diagnostic exams, one oral and one written, were facilitated to tailor the goals, objectives, and materials to the target population's needs, wants, lacks, and proficiency levels. The written assessment was conducted online on an App called "Quizizz." This tool allows instructors to conduct formative and summative assessments in an interactive way for students. The test was assigned during the first class of the course with a one-week due date in which learners were able to complete the test in a self-paced environment. In terms of the oral assessment, the 21 students participated in the interview. These interviews were divided into 3 different days and schedules to give students the opportunity of choosing the most convenient time to perform the assessment. For the purpose of evaluating the students' oral proficiency, the American Council on the Teaching of Foreign Languages (ACTFL) Proficiency Guidelines were used as a guide to categorize participants as novice, intermediate, and advanced (see Appendix E). These categories "describe the language performance of language learners in standards-based, performance-oriented learning environments and provide descriptive performance outcomes", meaning that learners were evaluated based on how much they could achieve in terms of English communication or if the skills were still developing. To do so, a set of questions arranged from the simplest to the most complex was designed (see Appendix F). These assessments were not aimed to be the traditional tests used to compare the students' initial level of English to what was achieved at the end of the course. The purpose of the diagnostic assessments was to analyze the most troublesome lexical items for learners so that they could be taught throughout the course. For this reason, a

general English test was chosen so researchers were able to assess the students' knowledge and identify their linguistic gaps. Moreover, researchers considered that having a general diagnostic would lower the anxiety levels of the participants since the assessment was aimed to be a casual conversation between a teacher and a student that also allowed the researchers to get to know their future learners.

During the semester, the instructors met with students once a week for 2 hours of synchronous instruction. Each synchronous session followed the TBLT cycle which, as its name suggests, was divided into a sequence of tasks that prepared students to perform the main objective throughout the lesson. This is in line with Mudra's (2016) description that in TBLT "the students are to follow a speaking lesson which consists of tasks. The tasks are communicative and contextual ones that the students have experienced daily. So, it enables them to practice the tasks and communicate as to better understanding of speaking skill" (p. 80). In addition to the synchronous lessons, asynchronous assignments were provided weekly as post-tasks to complete the task cycle.

## Instruments

### *Class Recordings*

Considering the advantages of the virtual environment, lessons were recorded with the consent of the students to be used as a source of data regarding their production. The words and expressions used by students to successfully fulfill the requirements of the main task were tallied to determine which target expressions from the pre-tasks were put into practice (see Appendices G1-G4 and H1-H4). To calculate the ratio of expressions taught in the pre-tasks that were

included in the main task, one of the researchers analyzed the video recordings from each lesson and compared how some specific vocabulary and expressions presented in the different pre-tasks were used in the main task to measure the fulfillment of the objectives presented at the beginning of the lesson.

In order to gather data, target lexical items (TLI) in pre-tasks were tallied and compared to the number of items that were actually used by students in the main task. The term TLI refers to expressions that students were exposed to during pre-task stages and that were considered crucial to the performance of the main task. The ratio between TLI in pre-tasks and TLI used by students (TLI-S) in main tasks allowed the researchers to identify to what extent the pre-task language influenced the performance of the main task. Moreover, considering that students had mixed proficiency levels, TLI were recorded as used by all learners participating in the session in order to obtain a group overview rather than results on individual performance. Therefore, the number of TLIs used by students responds to those expressions used by the complete group of learners in each session.

### *Self-Assessment*

After every lesson, students were invited to complete a self-assessment form that evaluated students' perceptions of how well the pre-tasks prepared them for the main task. The number of respondents for each self-assessment varied ranging from five to eleven.

To gather data, students were presented with the specific objectives of each pre-task and a table that allowed them to respond using competence-based criteria. They were asked to state to what extent they were able to achieve the main task. In addition to rating their perceived performance of the main tasks, an open space was provided for them to justify the reason behind their selection (Appendix J). The rationale behind the self-assessment was based on the fact that, as claimed by Fastré et al. (2010), “drawing students’ attention to the assessment criteria that are relevant for a particular learning task, improves their understanding of the criteria and subsequently leads to better test task performance and better self-assessment skills” (p. 519). Collecting this information was relevant for this study to identify any weaknesses or strengths shown in the pre-task design. The researchers decided to gather this information because, as Fastré et al. suggest, “when students know exactly what to do, their motivation, learning, and performance will increase significantly” (p. 520). For this reason, by designing the self-assessment for this study with open ended questions and closed criteria, it was possible to analyze the information using the mixed-methods approach to gather numeric data but also to understand the students’ motivations for their choices.

This instrument was adapted over the course of the research to create a second version (see Appendices K and L). The reasons behind the adaptations were based on three factors. First, the new instruments were created to allow students to explain their answers in Spanish, considering that perhaps it would allow students with lower proficiency levels to express themselves more

completely. Additionally, self-assessment instrument 1 required students to explain their choices for three of the indicators, but not for "Definitely able." Instruments 2.1 and 2.2 were adjusted and required students to explain their answers even if they selected "Definitely able." Finally, Instrument 2.2 was very similar to 2.1, except that the option of answering in Spanish was placed at the end of every open-ended question to gather specific feedback from each item in order to plan more effective tasks and activities. In addition, version 2.2 eliminated the tables and was shorter than 2.1 to have a better organization. These changes allowed researchers to compile more accurate data since the adaptations guided students to provide more focused information to respond to the research questions. The reason behind the modifications was that students were either providing too general comments that did not pertain to the objectives of the study or that the students were not providing any justification for their responses.

### *Focus Group*

A focus group was conducted during the last formal class of the course to gain an in-depth understanding of the students' perception towards the course. Seven students voluntarily participated in the focus group conducted in Spanish with the purpose of allowing them to share their perspectives towards the course and the preparation received in each pre-task and activity. First, the researcher set the expectations of the activity by encouraging students to provide their opinion freely since it was a safe space to share and express themselves. Two main questions were asked in this fifteen-minute session to provide enough time for

each student to share their point of view and to have their own space to talk and to comment on their classmates' response when needed. The first question was how they felt in the course. The intention was to gather general data and their perception towards the course. The second question was more specific in regard to the research questions of the study. In this case, students were asked if they felt that the pre-tasks presented in each lesson contributed to their performance in the main task by providing guidance in terms of vocabulary, target lexical items, and instructions on how to successfully achieve the task. The information was recorded by downloading the Zoom session that hosted the focus group and using the notes taken by the researcher conducting the activity.

**Procedures**

Class recordings were used to collect data to determine how helpful the target lexical items (TLI) introduced to the students in the pre-tasks were to achieve the main task of each lesson and to measure their performance. To do so, one of the researchers watched each of the lessons, highlighted the main lexical items presented and analyzed the number of times an item was used during the production of the main task.

The self-assessment instruments were sent to students at the end of each lesson to be completed over the course of the week or at the end of the class if time allowed it. Each instrument did not take longer than 10 minutes to complete using Google Forms, and the students' answers were gathered in an Excel document during the week.

Finally, the focus group was also recorded with the intention of analyzing students' responses towards the course and to better understand their perceptions on the role of pre-tasks in the achievement of the main task. For this reason, students were invited to an online session led in Spanish with the purpose of welcoming them into a safe and comfortable environment in which they could provide their opinions.

## Results and Discussion

In the following section, the results from three data-collection instruments are presented and discussed. First, the ratios of TLI and TLI-S from the recorded lessons in Units 2 and 3 are shown. Possible explanations and implications are suggested while potential relations are established for lessons from both units. Then, the results from the self-assessment instruments are addressed. Implications are drawn based on students' perspectives on pre-task stages and main task achievement. Finally, the findings from a focus group session are reported. Four relevant implications are explained in relation to the students' perception of conversational skills, lesson dynamics, asynchronous work, and course contents. Also, the students' comments are discussed in light of the second research question, which refers to pre-task practice and main task performance.

### Recorded Lessons

In order to gather data that would lead to a correlation between pre-tasks and learners' performance in the main task, lessons were recorded for further analysis of language use. As explained in the methods section, target lexical items

(TLI) in pre-tasks were tallied and compared to the number of items that were actually used by students in the main task. Before addressing these results, three caveats should be explained. First, the criteria to determine which expressions account for TLI should be clarified. TLI were selected on two premises: 1) students were exposed to these expressions either implicitly or explicitly during pre-task stages, and 2) these expressions were considered crucial to the performance of the main task. For instance, some TLI were used in handouts, texts, or useful language, but not all useful language was considered to be a TLI. Considering the nature of this course (ESP), the target language (specialized or field-specific lexical items) could not be interpreted in the same category as useful language. The former aims at facilitating interaction among learners while preparing for a task. The latter aims at providing relevant language that can be used during the main task of a lesson. For this reason, all those concepts or phrases that facilitated interaction but did not have a clear connection or applicability to the main task were not counted as evidence of possible effect of pre-tasks on main task performance. Secondly, another factor to take into account is the mode of interaction (Sotillo, 2000). As observed in the literature, students may produce more complex language when given more time to work asynchronously. In all of the lessons that were part of the data analysis, students performed pre-tasks and main tasks in synchronous sessions, which implied that the learners had little time to process new TLI. Finally, there is a distinction in the case of lessons from Unit 2, as different target language was presented to electrical and mechanical

engineering students. Further details regarding this distinction are provided later in the section below.

***Recorded lessons: Unit 2***

As part of the design of this ESP course, four lessons were devoted to each unit (see Appendices G1-G4). In Table 11.1, the ratio for TLI in pre-tasks and TLI-S in main tasks is provided for each lesson from Unit 2. The number of TLI and TLI-S are presented for both electrical (EE) and mechanical engineering (ME) students. As can be noted, the results show that no more than 40% of the TLI introduced in pre-tasks (an average of both engineering branches) were eventually used in the main task. This may suggest that it is not the number but the relevance of the TLI introduced that makes the difference. Yet, this is not to underestimate the influence of TLI in pre-task stages considering that no less than 20% of the TLI-S were used when performing the main task. This could suggest that it is indeed helpful to incorporate and rehearse target language in pre-tasks as explained by Nunan (2004). For a more accurate interpretation of these results, some clarifications should be addressed.

The second unit had a particular feature: it included different carrier content (technical vocabulary) for electrical and mechanical engineering students. The real content (for example, comparatives and superlatives) was the same. Carrier content varied somewhat to address more specific needs within the target engineering fields. For this reason, there are different results for each engineering branch. Most participants in this course were electrical engineering students (9)

while only two were enrolled in mechanical engineering. This would explain an imbalance in participation and the TLI ratio (as it is the case of the first two lessons) between the two groups. Interestingly, the gap seems to decrease as the lessons develop. Also, Lesson 7 seems to play a leveling role because it is the only session in Unit 2 that does not provide different target language for each engineering branch. Eventually, the gap in the average ratio of TLI-S (51 % - 29%) is not as substantial as the disparity in participants (9 - 2) would suggest. Furthermore, the particular case of Lesson 7 is worth mentioning. In this lesson, participants used very few TLIs from the expressions introduced in the pre-tasks (7 / 25). However, after careful analysis of the recording, it was found that learners make use of a significant number of TLIs from the previous lessons. Learners used mainly nouns (capacitor, cost, advantages, disadvantages, leakage current) and adjectives (aluminum, tantalum, low, resistant). This could suggest that task repetition (Ellis, 2018) could indeed benefit students' performance when it comes to language complexity. In this particular context, language complexity would be understood as using more TLI in main task performance. The correlation cannot be conclusive, but it may lead to future studies regarding the influence of pre-tasks on the learning or acquisition of TLIs.

**Table 11.1**

***Ratio of Pre-task Target Language Used by Students in Main Tasks: Unit 2***

| Lesson | TLI | TLI used by students | Ratio | % |
|---|---|---|---|---|
| **5** | EE: 21<br>ME: 32 | EE: 16 (7 students)<br>ME: 7 (2 students) | EE: 16 / 21<br>ME: 7 / 32 | EE: 76.1%<br>ME: 21.8% |
| **6** | EE: 26<br>ME: 27 | EE: 16 (10 students)<br>ME: 10 (1 student) | EE: 16 / 26<br>ME: 10 / 27 | EE: 61.5%<br>ME: 37.0% |
| **7*** | 16 | 7 (11 students) | 6 / 25 | 24 % |
| **8** | EE: 28<br>ME: 29 | EE: 10 (9 students)<br>ME: 8 (2 student) | EE: 10 / 29<br>ME: 8 / 28 | EE: 39.2%<br>ME: 27.5% |
| **Average** | | | | EE: 50.2 %<br>ME: 27.5 % |

**TLIs:** Target lexical items **EE:** Electrical Engineering **ME:** Mechanical Engineering

*Lesson 7 did not incorporate different TLIs for each engineering branch.

In a more in-depth analysis of the specific TLI-S in Unit 2, it was found that nouns had the highest TLI-S ratio. An average of 37% of TLI-S were nouns, 33.5% were adjectives, and 27.5% were verbs (see Table 11.2). Other expressions, namely phrases, were not considered due to their minimal use. These results could be explained in light of the objectives that were established for Unit 2. For instance, as can be observed in Appendices G1 and G4, students were asked to describe different components and materials. This type of task requires a greater use of nouns and adjectives. Also, considering the higher number of nouns that

were introduced in contrast with the number of adjectives and verbs, it seems reasonable that more lexical items in this category were used. A relevant implication to these results is that, regardless of the category, introducing a large number of TLI did not produce a more successful percentage in the TLI-S ratio. For instance, as can be noticed in Appendices I1-I2, in Lesson 5, 21 adjectives were introduced during pre-tasks to ME students, but only 2 TLI were used in the main task. In Lesson 7, 17 nouns were introduced to both populations, but only 3 were used. In contrast, when fewer TLI were presented, the TLI-S ratio was more successful. For example, in Lesson 6, 8 nouns were provided as TLI for EE students and 11 to ME students. Regardless of the difference in attendance, the TLI-S ratio was more effective in comparison to the instances in which a larger amount of TLI was introduced. The pattern is also consistent with adjectives in the same lesson. This could be explained in light of Ellis's (2018) allusion to working memory. The literature indicates that cognitive limitations in working memory, which may vary from student to student, could impact the effectiveness of pre-task planning.

**Table 11.2**

***TLI and TLI-S / Unit 2 – Overall Results***

| Population | Nouns | Adjectives | Verbs |
|---|---|---|---|
| EE Students | 21 / 50: 42% | 16 / 36: 44% | 3 / 9: 33% |
| ME Students | 18 / 54: 33% | 8 / 35: 23 % | 2 / 9: 22% |
| **Average** | **37.5 %** | **33.5 %** | **27.5 %** |

***Recorded lessons: Unit 3***

The numbers of TLI and TLI-S in each lesson from Unit 3 are presented in Table 12.1. The most relevant result shows that an average of 28% of TLI were used by students when performing the main task. This number diverges significantly from the pattern found in Unit 2, decreasing the average ratio of TLI-S from 40.3 % (ME + EE) to 28.6% in Unit 3. However, in Unit 3, there were additional factors that could have affected the number of TLI-S during the performance of main tasks. First, the particularity described in Unit 2 related to a distinction in engineering fields does not apply to Unit 3. In these four lessons, the same TLIs were introduced in pre-tasks to both electrical and mechanical engineering students (see Appendices H1-H4). In addition, the first session (Lesson 9) included language that could have been considered part of the TLIs since it complied with the two premises previously described: implicit or explicit exposure and applicability to main task performance. However, an exception was made with expressions that were considered too basic for the overall student proficiency. For instance, TLI such as “wind,” “animal,” “help,” and “accident” were indeed used by students, but considering their intermediate proficiency level, they were not taken into account for the TLI-S ratio. In the second session (Lesson 10), the main task consisted of a listening exercise. Students did have to interact to exchange information, but the language provided was mainly an aid for interaction. In this case, given that the performance of the main task involved TLIs that facilitated this interaction instead of field-specific vocabulary, only a few TLIs were considered. The students performed the main tasks in groups (Breakout Rooms),

and only one recording could be used (the lead teacher's group due to restrictions in Zoom settings which did not allow the recording of several breakout rooms simultaneously. Finally, the last session (Lesson 12) had been designed as a space for learners to perform their "final presentation." Hence, students could prepare their presentation at home and come ready to present in the lesson come ready to present in the lesson, breaking from the usual procedure of being exposed to field-specific TLIs in the pre-task stage for eventual use in the main task. In this lesson, an "additional" main task consisting of a question-and-answer segment was designed to follow the presentations. Due to time limitations, the researchers prepared only one pre-task for this lesson plan, aimed at preparing the students to participate in the post-presentation exchange. This session had the lowest ratio (1 / 10) of TLI-S to TLI ration, which might be explained by the students' entire attention being directed at their final presentation rather than the pre-task TLIs and the question-and-answer segment. Also, the nature of TLI was noticeably different from the type of TLI that students had been exposed to during the previous weeks (all TLI were very specific phrases to participate in a question-and-answer segment at the end of a formal presentation). These TLI were not introduced realistically and repetitively, as suggested by Elizondo et al. (2019, p. 81), which could be an important variable in the lower TLI-S ratio.

Overall, two implications can be drawn from these results. The main language skill in the main task seems to have an important effect on the type of language (for example, listening versus speaking) that needs to be introduced in pre-tasks and later used during the main task. Lack of relevant language may

result in students using their own phrases and vocabulary to interact however they can. Therefore, pre-task design seems to play a significant role in main task performance. A second implication is linked to the results in Unit 2. Even when the numbers are lower than in Unit 2, there is still evidence of students using some TLIs that were incorporated in pre-task stages. As can be noted in Table 12.1, even when fewer TLIs were taught or used, the ratio did not dramatically decrease (except for Lesson 12, which was discussed before). A summary of these results is illustrated below.

**Table 12.1**

***Ratio of Pre-task Target Language Used by Students in Main Tasks: Unit 3***

| Lesson | TLIs | TLIs used by students | Ratio | % |
|---|---|---|---|---|
| **9** | 28 | 11 (9 students) | 11 / 28 | 39.2 % |
| **10*** | 7 | 3 (4 students) | 3 / 7 | 42.8 % |
| **11** | 27 | 5 (9 students) | 5 / 28 | 17.8 % |
| **12**** | 7 | 1 (11 students) | 1 / 7 | 14.2 % |
| **Average** | | | | **28. 5 %** |

**TLIs:** Target lexical items

*Only four students could be recorded as the main task took place in breakout rooms (Zoom).

**Main task for lesson 12 was prepared by students at home. However, participating in a question-and-answer segment was added as an additional main task of the lesson.

In Table 12.2, the in-depth analysis of TLI-S in Unit 3 is presented. More specific data for each lesson can be observed in appendices I3-I4. The results show that verbs have the highest TLI-S ratio (46%), followed by nouns (34%), conjunctions (28%), and adjectives (11%). The variation in these numbers in contrast to the results in Unit 2 could also be attributed, in part, to the objectives for each lesson. None of the objectives for Unit 3 included the description of components and the TLI introduced in pre-tasks were fewer and more oriented towards interaction. For instance, Lesson 9 involved interpreting data in tables and figures, which may explain why the TLI-S ratio in verbs was higher than Unit 2, which had a focus on describing features of particular components or materials. In Lesson 9, learners benefitted from verbs such as “explain,” “show,” and “represent,” These TLI-S were more relevant to fulfill the main task than nouns such as “components,” “processes,” and “model.” In Lesson 10, the class objective consisted of identifying main ideas from a video. The main task took place in breakout rooms, where students would discuss the video they watched. The TLI mainly included verbs, such as “agree” and “disagree,” in order to facilitate interaction. This particularity in Lesson 10 suggests that a balance between interaction and content-related vocabulary must be attained in order to achieve a higher TLI-S ratio in main task performance. Finally, Unit 3 is also consistent with one finding from Unit 2: regardless of categories in vocabulary, a high number of TLI did not result in more TLI-S. This is also consistent with the variables that are addressed by Ellis (2018) in relation to the influence of working memory. For example, in Lesson 11, 17 adjectives were presented in pre-tasks but only two

were used. The same pattern was found in Lesson 9: 18 nouns were provided but only six were incorporated in the main task while 50% (4/8) of the verbs in the same lesson were used when fewer TLI were introduced during pre-tasks. In light of these low TLI-S ratios, it is advised that instructors consider the possibility of implementing task repetition and strategic planning during pre-task stages (Ellis, 2018) so that the students have at least two or more chances to be exposed to TLI.

**Table 12.2**

***TLI and TLI-S / Unit 3 – Overall Results***

| Population | Nouns | Adjectives | Verbs | Conjunctions |
|---|---|---|---|---|
| **EE / ME Students** | 8 / 23<br>34% | 2 / 18<br>11% | 6 / 13<br>46% | 2 / 7<br>28 % |

The research questions in this study aimed at elucidating how pre-tasks prepared students to fulfill task objectives based on the TLI-S ratio. The results indicate a potential correlation between the TLIs introduced in pre-tasks and the TLI-S in the main task. Even though individual differences such as personality, proficiency, and learning styles may have influenced these results, the consistency in these findings suggests that incorporating fewer TLI in pre-task design renders a higher TLI-S ratio in main task performance, at least under the conditions in which the students performed. From the perspective of the researchers, these results can be considered satisfactory as they show a significant influence of TLIs in the

development of task objectives for each lesson. Although the numbers varied from one lesson to another, the use of TLIs still has an effect in the performance of the main task. The next stage for instructors would be considering whether a higher ratio could be achieved by changing the conditions of the tasks; for instance, by adding explicit instructions to use a minimum number of TLI with peer- or self-evaluation after performing.

## Self-Assessments

In order to evaluate student perspectives on the possible role that pre-tasks play in preparing students for main tasks, self-assessments were administered. These explored why students thought they were able or unable to perform the main task of each lesson, hopefully leading to connections between task achievement and pre-task practice (or, conversely, connections between a lack of pre-task preparation and planning and an inability to achieve the task). The following sections present and interpret data gathered from these self-assessments, starting with results from Instrument 1.

### *Instrument 1: Lessons 6 - 9*

Table 13 illustrates the degree to which respondents indicated being able to achieve the main tasks of lessons 6-9 with Instrument 1. Overall, the majority of the respondents reported that they achieved the main task objectives of these lessons. As shown in Table 13, at least 60% of respondents indicated after each lesson that they were definitely able to complete the main tasks. This number was

higher for Lessons 7 and 9: 89% of participants perceived definitely achieving the main tasks.

**Table 13**

***Degree of Main Task Completion Indicated by Respondents for Four Main Tasks***

| Lesson | Main Task | Definitely | Somewhat | Not very | Not at all |
|---|---|---|---|---|---|
| 6 | Present an oral report | 60% | 40% | 0% | 0% |
| 7 | Write a formal email to request information | 89% | 0% | 0% | 11% |
| 8 | Describe applications of a metal / capacitor | 71.4% | 14.3% | 0% | 14.3% |
| 9 | Explain and present a figure | 89% | 11% | 0% | 0% |

Participants who indicated that they were unable to achieve the task fully provided several justifications. Three respondents referred to a lack of vocabulary: “I need more practice and vocabulary,” (Lesson 6); “I need vocabulary,” (Lesson 7); and “I think I need a little more vocabulary to express some of the things I had in mind,” (Lesson 9). One respondent cited insufficient time for planning and another stated “I need more practice” (Lesson 7). Lastly, one respondent referred to a grammatical aspect: “I don’t know how to conjugate clear sentences well” (Lesson 7).

At first glance, one could argue that the previous justifications support the idea that pre-task stages during these lessons did not completely prepare all students for the main tasks. However, due to the nature of Instrument 1, participants who reported being definitely able to complete the tasks were not asked to justify their answers; it is important to mention that this group constituted the majority for each self-assessment. That is to say, pre-tasks could very likely have been cited as rationale for task achievement, but the students who reported definitely achieving the task had not been instructed to provide justifications for this answer. This issue was addressed by adapting Instrument 1 for the second round of data collection, as explained in the methodology section.

Regarding the references to a need for more vocabulary, these were made after Lessons 6, 7, and 9. In those lessons, the number of TLIs were 26EE/27ME, 21, and 28, respectively, which constitute some of the higher numbers of TLIs for the eight lessons studied. For electrical engineering students, 28 was the highest number of TLIs provided in any lesson. In fact, the only lessons that incorporated more TLIs than 28 were Lessons 8 (29 TLIs) and 5 (32 TLIs), both TLI numbers for mechanical engineering students. This finding further supports the idea expressed earlier that perhaps the number of TLIs is not most important but rather the relevance of said linguistic items.

In addition to the relevance of the TLIs, the time to process said vocabulary may be a factor as well. In this case, perhaps more vocabulary was not needed but more time to process. This would be consistent with Sotillo (2000) as explained in

the literature review: complex vocabulary may require more processing time before learners can assimilate and produce it (p. 98).

### *Instrument 2.1: Lesson 10*

Main task achievement for Lesson 10 was reported by five respondents through Instrument 2.1. The main task for this lesson was to “show understanding of words guessed from context by identifying sequences and expressing opinion.” Four fifths of the participants stated that they fully achieved the main task objective, one of whom would like to improve. One respondent reported being unable to complete the task.

When asked to justify their answers, no students referred to pre-task exercises. Rather, two students repeated the objective, e.g. “I was able to read sentences and guess the meaning of words,” and “In cases I could do it.” One respondent cited previous experience: “[guessing meaning from context is] something I also did in the past when reading books.” The student who reported being unable to complete the task explained that they were absent during this part of the lesson due to a loss in internet connectivity.

Given that no students connected their reported task achievement with the practice and planning of the pre-task stages, a relationship between pre-task instruction and main task achievement from students’ perspectives could not be established from these results.

### *Instrument 2.2: Lessons 11 and 12*

Table 14 summarizes the degree of main task achievement reported by respondents with Instrument 2.2. Similar to the results from the previous instruments, nearly the entire group (80%) reported being definitely able to achieve the main task of both lessons. In the case of Lesson 12, 100% of students indicated that they were definitely able to achieve the main task; 45.5% of those students also indicated that they would like to improve some aspect of their performance.

**Table 14**

***Reported Main Task Achievement: Lessons 11 and 12***

| Lesson | Main Task | Definitely able | Definitely able but I would like to improve | Not very able | Not able |
|---|---|---|---|---|---|
| 11 | Propose an innovative engineering product to a specific audience by using persuasive language | 60% | 20% | 20% | 0% |
| 12 | Give a formal presentation that proposes an innovative solution | 54.5% | 45.5% | 0% | 0% |

When asked to justify their perceived achievement of the Lesson 11 task, one student referred specifically to a pre-task stage: “We read the text and we separated the ideas and later we distributed this [*sic.*] ideas for each student.” This description of procedures accurately corresponds to the first pre-task: students read about an innovative product, discussed its advantages and disadvantages, distributed pros and cons for each group member, and explained these pros and

cons to the class. This pre-task was intended to prepare students to propose their own innovative product in the main task by considering its advantages and disadvantages, distributing parts of the presentation, and using persuasive language (the persuasive language was introduced in pre-task 2 in which students organized the TLIs according to categories: cause and effect, expectation, and evidence).

The student who reported not completing the Lesson 11 task attributed this to a lack of knowledge of the lesson's carrier content: "I didn't know a lot about the engineering topics." Two possible rationales for this response are explored here. First, perhaps this particular student perceived an expectation that the carrier content needed to have been studied previously, and therefore felt anxious about their performance. When students read about the innovative products in the first pre-task, they were not expected to know about the innovations at the time of the class; however, this information was not communicated to the students during the class. The influence of anxiety may have affected this students' ability to reportedly achieve the task. On the other hand, this student's response may suggest that unfamiliarity with carrier content could play a role in effectively applying TLIs to achieve a task, even when those TLIs have been taught and practiced. While speculative, possible roles between carrier content knowledge, anxiety, and task achievement are important areas to investigate. If instructors have the carrier content of the course ready at the time of the needs analysis, perhaps the instructors can evaluate students' familiarity with the course carrier content. Furthermore, the instructors could investigate students' levels of anxiety when

confronted with unfamiliar content and/or explain to students during an activity that their knowledge of the carrier content is not expected, in order to decrease any anxiety levels.

For the Lesson 12 task, pre-task stages and pre-task contents were specifically cited by four participants as reasons for their perceived success: (1)"During the course, we practiced how to speak using technical language"; (2)"The teachers prepared us for giving presentations very well during classes"; (3)" During the course we completed several similar exercises, and that helped us achieve the presentation"; (4)"We practice [*sic.*] and researched." These references establish a connection between pre-task and reported main task achievement from those students' perspectives.

The justifications from Lesson 12 and Lesson 11 share some commonalities which mirror Ellis's (2018) descriptions of strategic planning and task repetition. "[C]ompleting similar exercises," "practice," and the references to preparation over multiple classes could all be understood as task repetition, particularly given that the Lesson 11 task was very similar to the Lesson 12 task: both involved proposing innovative solutions. Furthermore, both Lesson 11 and Lesson 12 involved strategic planning previous to the proposal presentation, synchronous and asynchronous respectively. That is to say, the students preparing the Lesson 11 main task strategically planned during the synchronous session with a time limit, and Lesson 12 was prepared outside of class, giving students further opportunities and more time to practice and strategically plan.

These observations prompt opportunities for future research. First, in order to investigate Ellis's (2018) findings on fluency, complexity, and accuracy, these measures could be included in the self-assessment instruments to evaluate students' perspectives of their production post-strategic planning and post-task repetition. A second study could investigate the role of synchronicity on main task performance by evaluating synchronous vs. asynchronous strategic planning.

In sum, data from Lessons 11 and 12 partly indicated a relationship between reported main task achievement and pre-task stages. Students referred to practice, preparation, similar exercises, research, and the procedures of a pre-task stage, all of which indicated that pre-task preparation indeed played a role in those students' perceived task achievement. The earlier results of Lessons 6-10 did not indicate a role between pre-task preparation and main task achievement; however, as explained in the methodology section, those findings were addressed through instrument design modifications.

The self-assessment reports of Lessons 10-12 indicated a persistent issue from the data collection process: rather than justifying their answers with reasons or examples, students repeated the main task objective in different words. These responses do not indicate any connection between pre-task and main task achievement because they do not refer to rationale for task completion. This point leads to another, which is that researchers must design their instruments in order to facilitate fruitful data collection. As discussed in the review of literature, research is key during this time when online ESP learning is becoming increasingly widespread. Knowing how to conduct said research, then, is crucial. Although

open-ended responses allow ample space for students to express themselves, students may not receive sufficient support to provide precise responses. Perhaps offering multiple choice options as well as an open response section would have aided students in supplying reasons for why they believed they were able to achieve the main task. Even when students provided rationale for their perceived (in)ability to achieve the main task, their reasons were often general, such as needing more vocabulary or more practice, without reference to the specific vocabulary or practice needed to truly achieve the task. This further supports the idea that providing options for students to choose from would likely facilitate more specific answers.

Related to the issue of instrument design, instrument implementation is also an important factor to discuss when conducting research in the online classroom, particularly whether or not to administer the self-assessment synchronously and/or asynchronously. For this study, self-assessments were administered both during and outside of class sessions. When students were asked to complete the assessment outside of class hours, participation was comparatively lower, and some respondents took several days to answer the assessment. In contrast, the number of respondents was higher when students were required to complete the self-assessment during the class session immediately after the main task or first post-task. While speculative (other variables could have played a role), these observations prompt important questions regarding the possible impacts of synchronous vs. asynchronous administration and the time allotted for completion on the rate of response and engagement with the instrument.

First, how precise are student self-assessments relative to the time between the main task performance and the administration of the self-assessment? To that point, one could argue both sides; students could provide more detailed answers after having a few days to reflect and ample time to respond. On the other hand, as time passes, perhaps students remember their performance more generally and thus supply answers that are not quite as specific as if they had responded immediately after the task. Secondly, how do students feel when completing an assessment in the presence of an instructor (even if the responses are anonymous)? Is there any reported pressure to respond a certain way? Lastly, what relationship exists, if any, between the number of respondents and the way the assessment was administered?

In brief, multiple variables must be weighed when deciding how to administer a self-assessment in the online classroom. These variables include, but are not limited to, the presence of the researchers, the immediacy (or lack thereof) of the assessment, the accuracy of the responses, and the number of participants. In the case of this study, students were not consulted on their preference. In future studies, participants may also provide insights into which type of administration (asynchronous vs. synchronous) helps them provide more precise, honest, and consistent responses. This would yield additional data that could potentially support the quantitative findings and help the researchers improve quantitative data collection.

**Focus Group**

The focus group was conducted as a 15-minute Zoom session in which students were encouraged to share their insights regarding the course. This session was led in Spanish to allow students to share their impressions in a comfortable and safe space. The first question asked was how they felt during the course in terms of their performance and their motivation. There were four main highlights that need to be considered. The first one corresponded to the importance given to the students' conversational skills. According to their responses, time in the lessons was mainly devoted to improving and developing their speaking skills. Students stated that this is one of the main skills that needed to be developed but, even if this was the main focus, the rest of the skills such as listening, reading, and writing were not neglected. The second aspect that was highlighted was the dynamics of the lesson. Students appreciated the fact that instructors built a safe space inside the class that allowed them to participate, share ideas, and develop their critical thinking skills. Additionally, one student claimed that she enjoyed how they were encouraged to participate only in English without feeling forced to do so. The third commonality in students' comments was that the asynchronous part of the lesson was well prepared, not extensive, and it allowed them to review the class and clarify any questions that could arise in their independent study time. The fourth aspect was found to be an area of improvement for the instructors of the course. In this case, four of the participants claimed that some of the topics studied were too specific. Consequently, the topic was new to them. They had never studied the carrier content, so it was difficult for

them to produce and adapt themselves to the new language considering they were also acquiring new information about their majors.

The second question asked in the focus group referred to one of the research questions proposed for this study. The interviewer asked if as students they felt that the different activities prepared them for the main task, and the 7 participants answered that they were indeed beneficial. The reasons participants provided to consider these pre-tasks helpful are listed below.

According to the students who were interviewed, the difficulty of the tasks in the lesson increased gradually, lowering the anxiety level and complexity of the challenges to achieve the objectives of the main task. In addition, students mentioned that the specific activities or pre-tasks did prepare them by providing the vocabulary and useful expressions that were needed in the main task. These lexical items are of great importance in students' preparation to provide resources that will allow them to speak and understand the task. Clark (1993) supports this statement by claiming that "speakers have to be able to identify words either by looking them up in memory (for comprehension) or by retrieving them as appropriate forms for conveying specific meaning (for production)" (p.2). Students' perceptions towards the benefits of vocabulary and useful expressions for their performance go along with the results obtained from the class recordings that were analyzed. One could argue that this success in usage lies in the fact that introducing lexicon in the learning process opens a window to the students' language acquisition.

Moreover, they mentioned how they felt that these pre-tasks were step by

step guidance to complete the projects assigned at the end of each lesson. For example, as was stated in the self-assessment results, having students read a text and separate ideas made it easier for them to organize their results, understand the structure to follow, and recognize lexical items needed to perform the main task. These findings are consistent with Nunan´s (2004) claim in the literature review that the pre-task stage “orients the learners to the task, generates interest, and rehearses essential language that will be required to complete the task” (p. 128).

These results coincide also with the responses tallied in the self-assessment analysis. As an example, the majority of students’ responses in Lessons 6-9 were “definitely able,” but no justification was given. The focus group represented an opportunity for the students to express their reasons to choose these criteria. Perhaps the inconsistency in data lies in the fact that Instrument 1 did not encourage learners to justify their responses, but in a one-on-one virtual interaction, the interviewer has the possibility of providing further guidance on students’ responses and can formulate follow up questions that are relevant to the purpose of the study.

After careful analysis of the different instruments used to examine data, it is possible to state that students’ perceptions regarding the usefulness of pre-tasks in the preparation of the main task agreed with the quantitative results obtained in the class recordings. Moreover, the modifications made to the self-assessment instruments proved to be beneficial since they made the reflection process for the students more straightforward. The students were guided on the type of responses

requested to validate their choices on their ability to perform the main tasks. These results were also confirmed in the focus group session, making it possible to state that the introduction of lexical items during the pre-tasks is indeed helpful for the development of the main task as well as for helping students improve their performance.

**Limitations**

The ESP course in question was implemented under unusual and unexpected conditions. As the global pandemic struck, both the execution of the course as well as the data collection process for this research paper (originally taking place in a face-to-face context) had to be adapted without much previous preparation to online settings. Such circumstances created additional challenges for the researchers that restrained the scope of the study. First, all class sessions and assessments had to be recorded for further analysis. However, due to technical issues some recordings of oral assessments were not properly recorded. As a consequence, the isolated numbers in the oral assessment scores could not be directly linked to the research questions without a proper analysis of the students' performance in the recordings. For this reason, oral assessments were not used as part of the data collection in this study.

Another limitation that could be traced back to the lack of face-to-face interaction was the fluctuating participation in data collection instruments, such as the self-assessment survey. Students' participation was not mandatory but encouraged by the researchers. Sometimes, learners had to be reminded several

times before completing the instrument. This situation could have affected their adequate reflection on the previous class since some of the participants responded to the survey days after the class had ended. Additionally, some students did not provide a justification for their answers. This led to the researchers adapting the instruments in an attempt to make data collection more precise to better answer the research questions, but these modifications did not always render the desired results. Few learners provided information that could be directly linked to the research questions in this study. Therefore, the design of the instruments is also considered as part of the limitations.

Future studies in similar conditions must carefully consider the design of data collection instruments in light of the participants' perception of what is required. Students may need more specific guidance into the type of information they are asked to provide, especially in online settings where social interaction can be deficient and a mismatch of expectations may arise. Otherwise, participants may end up giving very little, irrelevant, or too general information that could have a negative impact in the data collection process and the analysis of results. In this study, even after some adaptations to the self-assessment instrument, the information provided was still insufficient on the part of the students. This created a weakness at the moment of interpreting qualitative data. This limitation in instrument design, lack of specificity in some students' responses, as well as the other limitations described above (technical issues in class recordings and fluctuating participation in data collection instruments), need to be pondered when reading the results and conclusions in this study.

## Conclusion

This study was conducted with the purpose of identifying the role of pre-tasks in an online ESP course. To consider the first sub question inquiring if the pre-tasks prepared students to fulfill the objectives based on their performance, the results obtained suggest that the use of target lexical items as a tool to prepare students for the main task during the pre-tasks is indeed helpful. These expressions were not only beneficial at the moment of the main task, but they continued to be useful for fulfilling the task requirements of subsequent lessons. Moreover, it is possible to state that incorporating fewer TLI in pre-tasks is preferable since, in that case, learners use a greater proportion of the TLI-S introduced in the main task, increasing the level of their performance and lexicon acquisition.

From the students' perspective, it may be possible to claim that the use of pre-tasks played a major role in their task achievement. According to the information gathered in the focus group and self-assessments, pre-tasks made it possible for students to perceive that they were definitely able to complete the main tasks. Even if some responses were categorized as not able at all, external factors such as internet connection issues, time availability, and lack of technical knowledge on the students' part may have possibly interfered in the students' perceptions. Moreover, pre-tasks helped students prepare for the main task by incrementing the level of difficulty gradually. According to the participants, even if the level of difficulty increased, having studied the different vocabulary, target expressions, and the step-by-step guidance provided contributed to their performance in the main task of each

lesson. Nevertheless, the lack of in person interaction and guidance in the completion of the self-assessments resulted in some of the implications and recommendations presented in the next section.

**Recommendations**

The researchers of this study propose the following recommendations for future reference in order to maximize data collection and student proficiency in ESP courses for mechanical and electrical engineers:

1. Instruments must be designed with the purpose of facilitating data collection that can better help to answer the research questions by considering how learners may respond to the criteria and by anticipating limited responses. Even if open-ended questions provide a space for learners to express themselves, they need to be followed by close-ended questions to guide their rationale behind their selections and to make sure researchers will gather information directly addressing the research questions.
2. Self-assessment administration should be assigned out of class time to maximize in class practice. Nonetheless, it would be beneficial if students completed the assessment as part of their portfolio of assignments in the next 2 days after the lesson to encourage them to complete the self-assessment as soon as possible so data collection is not affected.
3. Instructors should look more deeply into the students' knowledge of potential carrier content topics before designing practicum lessons. By doing so, the

students' lack of familiarity with the content will not interfere with the progress of the class.

4. The design of a focused diagnostic test is recommended in future reviews to compare the students' previous knowledge to what they achieve at the end of the course.
5. Further research in terms of the influence of pre-tasks on the learning or acquisition of target language items is recommended considering the lack of sources existing nowadays. As this study and the relevant literature indicate, there is also a lack of research on pre-tasks and their influence on main tasks in online environments when teaching with the TBLT method in ESP courses. For this reason, the researchers suggest further study of the implications of pre-tasks and their influence on main tasks to promote language acquisition especially in virtual settings. In addition, it is recommended to investigate if a higher ratio could be achieved by changing the conditions of the task, for example, if researchers were to add explicit instructions to use a minimum number of TLI in the lessons.

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## Appendix A: Stakeholders Questionnaire

This instrument aims at collecting relevant information concerning the fields of electrical and mechanical engineering with the goal of designing an ESP course (English for Specific Purposes) for engineering students. The data will be used to tailor the course to the needs of the target population. All responses will be of great value and will be exclusively used for academic purposes in the English Teaching Master's Program at the University of Costa Rica. Thanks in advance for your time and collaboration.

**Name:**

_____

**Engineering Field:**

_____

**Contact Info (Email/Phone Number):**

_____

**Workplace:**

_____

## Section I – Academic Needs

1. Based on your experience, which of the following English language skills are of highest relevance to engineering students. You may select more than one option.

**(  )** Oral presentation of research projects
**(  )** Oral presentation of previously studied topics
**(  )** Writing academic reports
**(  )** Writing manuals and protocols
**(  )** Reading academic texts
**(  )** Reading manuals
**(  )** Reading emails
**(  )** Listening to talks and lectures
**(  )** Oral interaction with experts

2. Which target audiences do engineering students speak to most frequently?

**(  )** Classmates
**(  )** Supervisors

( ) Experts

( ) Teachers

( ) Other: _____.

3. Which target audiences do engineering students write to most frequently?

( ) Classmates

( ) Supervisors

( ) Experts

( ) Teachers

( ) Other: _____.

## Section II – Work Needs

4. Based on your experience, which of the following selection processes require the use of English for engineering students?

( ) Job Application

( ) Emails

( ) Resume

( ) Job Interview

( ) Written Test

( ) English is not a requirement for selection processes

( ) Other: _____.

5. Based on your experience, which of the following English language skills are of the highest relevance to engineers at the workplace?

( ) Oral presentation of research projects

( ) Oral presentation of research proposals

( ) Writing academic reports

( ) Writing manuals and protocols

( ) Reading academic texts

( ) Reading manuals

( ) Reading emails

( ) Listening to talks and lectures

( ) Oral interaction with other experts

6. Which target audiences do engineers speak to most frequently?

( ) Colleagues

( ) Supervisors

( ) Experts

( ) Clients

( ) Other: _____.

7. Which target audiences do engineers write to most frequently?

( ) Colleagues

( ) Supervisors

( ) Experts

( ) Clients

( ) Other: _____.

8. Based on your experience, which professional development opportunities are most frequently sought by engineers?

_____
_____
_____
_____

9. Which of the previously mentioned options requires the most of use of English?

_____
_____
_____
_____

## Appendix B: Informant Questionnaire

**Universidad de Costa Rica**
**Maestría Profesional en la Enseñanza del Inglés como Lengua Extranjera**

The following questionnaire intends to collect data related to the specific English needs that engineering students may encounter during their career. This information will be used for the UCR Master's program in Teaching English as a Foreign Language to design an English course to satisfy those needs. Completing this questionnaire will take no longer than 15 minutes; all the information provided will be confidential. Thank you for taking the time to complete this survey.

### Personal Information

Name: _____

Phone Number: _____ Email address: _____

Workplace: _____

**Hiring process**

1. Which of the following aspects of the hiring process, if any, are required in English at your workplace?
    1. application
    2. email of interest
    3. resume
    4. interview
    5. written exam
    6. others:
    7. no English is required in the hiring process

**Emails**

1. At your workplace, who do employees send emails to most frequently?

_____

_____

_____

2. What purpose(s) do these emails have?

_____

_____

_____

**Written texts**

1. Which of the following documents are produced in English at your workplace?

   a. manuals
   b. technical reports
   c. research articles
   d. abstracts
   e. others:
   f. none of the above

2. Of the previous texts, which is/are the most frequently produced?

_____

_____

_____

**Communication Skills**

1. Do you give any presentations as part of your job?
   **If your answer is No, skip to the next section*

2. Where do presentations commonly take place?

   a. In meetings with coworkers
   b. In meetings with supervisors
   c. At conferences
   d. At training sessions
   e. In virtual meetings oriented to English-speakers

3. Who is the audience of these presentations mostly?

a. Native English speakers
b. Non-native English speakers
c. Coworkers
d. Supervisors/Bosses
e. Clients
f. Experts in engineering

4. What are the main purposes of these presentations?

_____
_____
_____

**Professional Development**

1) To continue your professional education do you:

1. participate in seminars?
2. attend conferences?
3. read studies?
4. participate in distance-learning programs?
5. do volunteer work?

2. Of the previous options, which ones require English the most?

_____
_____
_____

## Appendix C: Student Contact Information

Dear student,

We appreciate your willingness to participate in the course English for Engineers. The purpose of this survey is to gather important contact information that will be helpful for the course development. If you have any question, do not hesitate to contact us.

Thank you in advance for your cooperation.

Regards,
Carlos González, Fanny Maroto and Kelsey Peterson

**Name:** _____

**Email Address** (Please choose the one you would like us to use for further communication): _____

**Phone number:** _____

1. Would you be willing to receive information via WhatsApp?

____ Yes ____ No ____ Other: _____

2. What engineering branch are you studying?

____ Electrical ____ Mechanical ____ Other: _____

3. Are you working as an engineer?

____ Yes ____ No

4. Do you know an engineer whose job requires English that will be willing to provide information?

____ Yes ____ No

5. If your answer is “yes”, please complete the following blanks with their contact information.

Name of the person: _____

Workplace: _____

Email Address: _____

## Appendix D: Student Questionnaire

**Universidad de Costa Rica**
**Maestría Profesional en la Enseñanza del Inglés como Lengua Extranjera**

The following questionnaire intends to collect data related to the specific English needs that engineering students may encounter during their career. This information will be used for the UCR Master's program in Teaching English as a Foreign Language to design an English course to satisfy those needs. Completing this questionnaire will take no longer than 15 minutes; all the information provided will be confidential. Thank you for taking the time to complete this survey.

### Section 1: Personal Information

Name: _____

Email address: _____

Major: _____

1. For how many years have you studied engineering? _____

2. Are you working at the moment? If so, please describe your responsibilities.

_____

_____

_____

_____

3. Which field of engineering would you like to participate in in the future? You may choose more than one option.

a) Automatic control ____

b) Telecommunication services and networks ____

c) Electricity and potential____

d) Electronics____

e) Telematic____

f) Education and research____

g) Mechanical design____

h) Renewable energies____

i) Thermodynamics____

j) Manufacture____

k) Materials design____

l) Other(s): _____

4. In case it's necessary, do you have any electronic devices such as a laptop, tablet, cell phone, etc.? ____ Yes ____ No

5. Would you be willing to participate in the English course for engineering if it is virtual? ____ Yes ____ No

**Section 2: Language**

This section contains questions regarding 1) the difficulty level of various skills and 2) the frequency with which you use English in your major.

6. Please read the following skills and mark each one according to how difficult it is for you to do in English. (1 = least difficult, 4 = most difficult)

| **Skill** | **1** | **2** | **3** | **4** |
|---|---|---|---|---|
| Understanding journal articles | | | | |
| Giving oral presentations in an academic setting | | | | |
| Giving oral presentations in a work setting | | | | |
| Using engineering vocabulary | | | | |
| Maintaining a formal conversation about my field | | | | |
| Orally summarizing an idea (of an engineering expert) | | | | |
| Writing a summary of an idea (of an engineering expert) | | | | |

| | | | | |
|---|---|---|---|---|
| Understanding a talk or lecture about my field | | | | |
| Writing formal emails (ex. to express interest in a job or communicate with product suppliers) | | | | |
| Describing a table or graph during a presentation | | | | |
| Writing a user's manual for a product | | | | |
| Pronouncing technical vocabulary | | | | |
| Writing a technical report | | | | |
| Writing an academic article | | | | |

7. Which of the skills mentioned in the previous question would you like an English course to focus on? Please indicate 3 skills, with the first being the most important.

_____
_____
_____
_____
_____
_____

8. How frequently do you **read** these texts in English in your UCR engineering courses?

| | **1 Never** | **2 Infrequently** | **3 Frequently** | **4 Almost always** |
|---|---|---|---|---|
| **Manuals** | | | | |
| **Technical reports** | | | | |
| **Emails** | | | | |
| **Academic articles** | | | | |
| **Abstracts** | | | | |

9. How frequently do you write these texts in English in your UCR engineering courses?

| | **1 Never** | **2 Infrequently** | **3 Frequently** | **4 Almost always** |
|---|---|---|---|---|
| **Manuals** | | | | |
| **Technical reports** | | | | |
| **Emails** | | | | |
| **Academic articles** | | | | |
| **Abstracts** | | | | |

10. How frequently have you done the following actions in English during your engineering major?

| | **1 Never** | **2 Infrequently** | **3 Frequently** | **4 Almost always** |
|---|---|---|---|---|
| Follow an engineering class taught in English | | | | |
| Watch videos related to my branch of engineering | | | | |
| Listen to a person giving instructions about a process | | | | |
| Carry out research | | | | |
| Give presentations about topics related to my major | | | | |

11. I prefer an English course that mainly focuses on…

1. my current academic needs ____
2. my future occupational needs____
3. both (1 and 2) ____

12. From the topics that you have studied in your major so far, are there any that you would like to incorporate into this course? Please write them in order of interest (1 - most interesting).

_____

_____

_____

**Section 3: Learning**

**Learning Styles**

13. If you attempt to learn to use a new software, what are you most likely to do?

A_____ Listen to an online tutorial by an expert.

B_____ Look at online charts or illustrations.

C_____ Read instructions in a PDF manual.

D_____ Explore the software by yourself.

14. During a classroom workshop, what are you most likely to do?

A_____ Write key words on the most relevant information.

B_____ Record the lecture, and listen to it later.

C_____ Focus on the hands-on section.

D_____ Illustrate main ideas with symbols and doodles.

15. If you intend to prepare for a test, what are you most likely to do?

A_____ Listen to experts explaining the content in videos.

B_____ Study infographics and visual summaries.

C_____ Read the content again and again.

D_____ Create a summary of the content by yourself.

16. If you attempt to learn an installation protocol, what are you most likely to do?

A_____ Read the protocol and re-write it by yourself.

B_____ Read the protocol several times.

C_____ Illustrate the protocol with drawings and/or pictures.

D_____ Listen to an expert explaining the protocol.

17. If you needed English tutoring to learn new vocabulary, you would like the teacher to:

A_____ Create games with real objects to exemplify the vocabulary.

B_____ Explain the meaning of each word while you listen.

C_____ Give you a list of definitions that you can read at home.

D_____ Give you a handout with illustrations of each word.

**Classroom Preferences**

18. What are some traits you consider to be desirable in a teacher?

_____

_____

_____

19. What do you consider to be your weaknesses and strengths as a student?

_____

_____

_____

20. During a class, what do you find to be more learning-effective?

A) Work in groups

B) Work in pairs

C) Work individually

D) All of the above

21. Based on your preference, rank the following course materials, **1 being the most important** and **5 the least important** to enhance learning opportunities:

_____ Illustrated materials

_____ Short readings

_____ Videos

_____ Worksheets

_____ Podcasts

22. Which class activities make you feel more motivated? More than one option is possible.

| | | | |
|---|---|---|---|
| | Oral reports | | Solving problems |
| | Demonstrations | | Class discussions |
| | Written tasks | | Online research |
| | Analyzing texts | | Other: |

**Attitudes**

23. Have you taken English courses before? _____ Yes _____ No

24. How would you describe your experience when taking English classes?

a) Motivating

b) Tedious

c) Frustrating

c) Interesting

d) Other: _____

25. Explain why you felt that way:

_____

_____

_____

26. How would you describe an ideal English class?

_____

_____

_____

# Appendix E

English for Engineering
Proficiency Test
Speaking
(Adapted from ACTFL Proficiency Guidelines)

| Proficiency | Questions |
|---|---|
| **NOVICE** | • How are you? / How are you doing today?<br>• Tell me about yourself.<br>• Can you mention three objects you use every day?<br>• What do you usually do in your free time? |
| **INTERMEDIATE** | • What do you do every day?<br>• Tell me about your family.<br>• What do you usually buy at the supermarket?<br>• Do you shop online? Give a couple of examples.<br>• Have you traveled abroad? / Where would you like to travel?<br>• How do you prepare for a trip?<br>• When you travel, do you prefer a hotel or an Airbnb? Why?<br>• How much do you pay for food/Internet/transportation?<br>• How was your experience in high school?<br>• Do you work? / Where would you like to work?<br>• What are your strengths?<br>• What are you passionate about? |
| **ADVANCED** | • What do you know about unemployment in Costa Rica?<br>• What are some important challenges we face as society?<br>• How do you see Costa Rica in the next ten years?<br>• What are your personal, academic and professional goals?<br>• What are the most important challenges in the field of engineering? |

# Appendix F

English for Engineering: Speaking Diagnostic Test
Based on ACTFL Speaking Proficiency Guidelines

| PROFICIENCY | DESCRIPTOR | Developing | Accomplished |
|---|---|---|---|
| **Novice Low** | Given enough time and familiar cues, student is able to exchange greetings and name familiar objects. Student cannot truly participate in a conversational exchange. Pronunciation may be unintelligible. | | |
| **Novice Mid** | Student is able to provide two or three-word answers. Pauses are frequent and vocabulary is simple. Student may resort to repetition, native language or silence. | | |
| **Novice High** | Student is able to handle a conversation about personal information, familiar objects and activities. Pronunciation, syntax, and vocabulary is influenced by native language. Misunderstandings may arise, but repetition and rephrasing often helps. | | |
| **Intermediate Low** | Student is able to talk about personal information, family, preferences and daily routines. Student may be hesitant and inaccurate while searching for appropriate vocabulary. Pronunciation, vocabulary and syntax are still influenced by native language. | | |
| **Intermediate Mid** | Student can successfully talk about concrete topics such as herself, family, interests, and immediate needs such as food, shopping, and traveling. Student can successfully ask questions when necessary to obtain simple information. Speech contains pauses, reformulations and self-corrections while searching for adequate language. | | |
| **Intermediate High** | Student can easily engage in conversation about work, school, recreation and particular interests. Student is able to describe and narrate in all time frames with occasional breakdowns. Interference from native language may be occasional (false cognates, literal translations). | | |
| **Advance Low** | Student is accurate and precise to participate in formal and informal conversations related to school, leisure activities, current events, and matters of public interest. Responses are generally not longer than a single paragraph. Self-correction can be frequent. Speech may show inconsistent use of verb endings. | | |
| **Advance Mid** | Student is able to participate actively and confidently in formal and informal exchanges related to employment, leisure activities, current events, and matters of public and/or individual relevance. Rephrasing and circumlocution and often employed. Messages are conveyed as intended without misinterpretation. | | |
| **Advance High** | Student is able to communicate with easy and great fluency. Student can narrate accurately in all time frames and resort to strategies like circumlocution, rephrasing or illustration when necessary. Student can provide arguments to support his opinions and formulate hypothesis. Vocabulary and intonation are precise. | | |

## Appendix G1
## Recorded Lesson # 5 / Unit 2

**General Objective:** At the end of the lesson, students will be able to successfully describe characteristics of specific metals or types of capacitors used for projects or products by engaging in a short conversation.

| Stage | Target expressions introduced in pre-tasks | Target expressions used by students during the main task |
|---|---|---|
| **Pre-task 1** | EE: Size / Stability / Tolerance / Dissipation / Leakage Current / Voltage / Availability / Cost (8)<br>ME: : Strength / Corrosion / Thermal / Conductivity / Welding / Workability / Cost (7) | **EE [8]:** tantalum /aluminum capacitor / smaller than / higher than / stabler / temperature / voltage range / larger / reverse voltage tolerance / better / cheaper / lower / leakage current / cost / size /<br><br>**ME [2]:** aluminum / cost / lower / corrosion resistance / strength / high conductivity / workability / |
| **Pre-task 2** | EE: tantalum/aluminum capacitor / smaller, stabler, cheaper, higher, lower, larger than (8)<br>ME: aluminum / stainless steel / stronger, lighter, softer, harder than / more resistant, expensive than / better [noun] than (9) | |
| **Pre-task 3** | EE: dissipation / voltage range / reverse voltage tolerance / temperature stability / leakage current / availability / cost / smaller / larger / stabler / less stable / lower / higher more-less expensive (7)<br>ME: weaker/ corrosion resistance / electrical-thermal conductivity / workability / effect on foods / cost / stronger / lighter / heavier / softer / harder / cheaper / more-less resistant / good-excellent-poor conductor / lower-higher temperatures / harder-easier to weld / more-less reactive / more expensive (16) | |
| **Total** | **EE:** 21 / **ME:** 32 | **EE: 16 ME: 7** |
| **Ratio** | EE: 16 / 21 ME: 7 / 32 | |

**EE:** Electrical Engineering **ME:** Mechanical Engineering **[n]:** Number of students **(n):** number of expressions **Green:** repeated

## Appendix G2

## Recorded Lesson # 6 / Unit 2

**General Objective:** At the end of the lesson, students will be able to successfully advise clients by explaining the advantages and disadvantages of a material or component in an oral report to ensure its good quality.

| Stage | Target expressions introduced in pre-tasks | Target expressions used by students during the main task |
|---|---|---|
| **Pre-task 1** | Both: Advantages / Upsides / Disadvantages / drawbacks / generally / typically / normally / usually / materials (8)<br>ME: Aluminum / steel / highly resistant / corrosion / much heavier/ denser / force / lighter / strength to weight ratio / less likely to / price / cheaper (12)<br>EE: Aluminum / Tantalum / capacitors / more-less expensive / small size / voltage / lower leakage current / higher / stability / higher level of capacitance / larger (11) | EE [9]: capacitor / aluminum / tantalum / voltage / usually / lower voltage / high-low voltage / small / size / disadvantages / larger / advantages / stability / high leakage current / more expensive / recommend<br><br>ME [1]: stainless steel / corrosion resistance / force / material / advantage / strength / disadvantage / heavier / higher cost / aluminum |
| **Pre-task 2** | Considering / Given that / Because you /<br>I recommend / I advise you to / I suggest that you (6)<br>Note: Ss used “recommend” and “suggest” in on BR. These expressions are used to help interaction and can be substituted, which might explain why they were not used in the main task. Also, Ss seemed to struggle with time to prepare for the main task. Some did not have time to go over the “recommendations” section of their Main Task presentation. | |
| **Total** | **EE:** 25 / **ME:** 26 | **EE: 16 ME: 10** |
| **Ratio** | EE: 16 / 25 | ME: 10 / 26 |

**EE:** Electrical Engineering **ME:** Mechanical Engineering **[n]:** Number of students **(n):** number of expressions

## Appendix G3

## Recorded Lesson # 7 / Unit 2

**General Objective:** At the end of the lesson, students will be able to politely request information via email about materials or components in order to determine the cost and safety issues.

| Stage | Target expressions introduced in pre-tasks | Target expressions used by students during the main task |
|---|---|---|
| **Pre-task 1** | Reduce / cost / materials / components / product / aesthetics/ functionality / quality / quantity / corrosion / heat / machinability / formability / weldability / properties / purchase (16) | suggest / request / aesthetics / recommend / components / best regards / materials (7)<br>Students: [11]<br>**Note:** Students used target language from previous lessons: tantalum, aluminum, capacitors, small, leakage current, resistant, low, cost, capacitor, advantages, disadvantages. (11)<br>**Note 2:** This was a writing task (email). |
| **Pre-task 2** | For this project / relay outputs / thermostat / finally / best regards<br>Thank you for your request / For this purpose / I recommend / suggest (9) | |
| **Total** | **25** | **7** *18* |
| **Ratio** | 7 / 25 *18/25* | |

**EE:** Electrical Engineering **ME:** Mechanical Engineering **[n]:** Number of students **(n):** number of expressions

## Appendix G4
## Recorded Lesson # 8 / Unit 2

**General Objective:** At the end of the lesson, students will be able to successfully describe possible applications of specific metals or types of capacitors by referring to specific properties in a brief presentation.

| Stage | Target expressions introduced in pre-tasks | Target expressions used by students during the main task |
|---|---|---|
| **Pre-task 1** | ME: more expensive / resistant / heavier / harder / better / lighter / thermal conductivity /corrosion / advantages / disadvantages / copper (11)<br>EE: smaller / lower / stabler / dissipation / expensive / stability / advantages / disadvantages / cheaper / ceramic (10) | ME: applications / considering that / corrosion resistance / because / conductivity / ideal for / high / lighter (8)<br>[2]<br>EE: Considering that / stability / applications / ideal for / / considering that / used in / ripple / DC power / signal / power supply / expensive (11)<br>[5]<br>**Note:** Two students were not able to perform the main task because they were taking the oral assessment. |
| **Pre-task 2** | ME: used in / although / strength / corrosion resistance / power lines / electrical conductivity / wires / food production / storage / ship containers / ductile / ideal for / allows for / fuel / maintenance / costs / considering that / because of (18)<br>EE: take advantage / leakage current / high capacity / long-term stability / rely on / due to / tend to / stability / ripple frequencies / used in / power supply / DC power / military / applications / audio amplifiers / motherboards / suitable / considering that / signal (19) | |
| **Total** | ME: 28 EE: 29 | ME: 8 EE: 11 |
| **Ratio** | ME: 8 / 28 EE: 11 / 29 | |

**EE:** Electrical Engineering **ME:** Mechanical Engineering **[n]:** Number of students **(n):** number of expressions

## Appendix H1
## Recorded Lesson # 9 / Unit 3

**General Objective:** At the end of the lesson, students will be able to accurately interpret data from figures in written texts such as manuals, protocols, and research articles related to innovative projects by using the appropriate language and vocabulary.

| Stage | Target expressions introduced in pre-tasks | Target expressions used by students during the main task |
|---|---|---|
| **Pre-task 1** | Bar graph / equation / flow chart / image / line graph / pie chart / flow chart / show / indicate / process / method / categorize / figures / visual representation / explain / functions / represent (17) | Explain / figure / pie chart / model / shown / components / motor / representing / processes / consist of / function (11) [9]<br>**Note 1:** Target language used that was too basic was no take into account. Ex: wind, animal, accident. help<br>**Note 2:** All students read the text they wrote for the main task. |
| **Pre-task 2** | Power trackers / solar array / vehicle / power / motor controller / appear / figure / reflect / weather-related / lightning / outage events / consist of (11) | |
| **Total** | 28 | **11** |
| **Ratio** | 11 / 28 | |

**EE:** Electrical Engineering **ME:** Mechanical Engineering **[n]:** Number of students **(n):** number of expressions

## Appendix H2

## Recorded Lesson # 10 / Unit 3

**General Objective:** At the end of the lesson, students will be able to accurately identify main ideas in real life scenarios such as TED Talks by identifying meaning from context.

| Stage | Target expressions introduced in pre-tasks | Target expressions used by students during the main task |
|---|---|---|
| **Pre-task 1** | believe that / agree / disagree / mean (4) | I agree / empathy / believe that (3)<br>[4] **<br>**Note 1:** Target language used that was too basic was not taken into account. Ex: watch, listen, do, understand<br>**Note 2:** Main task is a listening exercise. Students exchange information in groups. Only the lead teacher's group was recorded.**<br>**Note 3:** Language from pre-tasks was very limited and involved mainly expressions for interaction (useful language) rather than vocabulary related to the content of the video. |
| **Pre-task 2** | think like / anthropologists / empathy (3) | |
| **Total** | 7 | **3** |
| **Ratio** | 3 / / 7 | |

**EE:** Electrical Engineering **ME:** Mechanical Engineering **[n]:** Number of students **(n):** number of expressions

## Appendix H3
## Recorded Lesson # 11 / Unit 3

**General Objective:** At the end of the lesson, students will be able to successfully propose innovative products to a specific audience by using the appropriate vocabulary and persuasive language.

| Stage | Target expressions introduced in pre-tasks | Target expressions used by students during the main task |
|---|---|---|
| **Pre-task 1** | **Advantages /** efficient / cheap / high-quality / light / accessible / practical / clean energy / recycled / durable / materials.<br>**Disadvantages /** inefficient / expensive / heavy / not practical / traditional energy / low-quality materials. | practical / materials / efficient / as a result / for this reason (5)<br>[9]<br>**Note 1:** Ss used several expressions from the MT useful language, but these are beyond the scope of this study. |
| **Pre-task 2** | **Expectation:** remarkable / unbelievable / surprising / amazing<br>**Cause and Effect:** as a result / for this reason / consequently / due to<br>**Evidence:** according t / based on / experts say / as indicated by | |
| **Total** | 27 | **5** |
| **Ratio** | 5 / 27 | |

**EE:** Electrical Engineering **ME:** Mechanical Engineering **[n]:** Number of students **(n):** number of expressions

## Appendix H4

## Recorded Lesson # 12 / Unit 3

**General Objective:** At the end of the lesson, students will be able to successfully propose innovative products to a specific audience by using the appropriate vocabulary and persuasive language.

| Stage | Target expressions introduced in pre-tasks | Target expressions used by students during the main task |
|---|---|---|
| **Pre-task 1** | We welcome any comments-questions / I can answer that for you / Perhaps ____ can answer / Let's see… / Sorry, did you say _____ or _____? / Pardon, could you repeat the question? / Let's start with ____ question and then _____ next. | Maybe I can help you (I can answer that for you) (1)<br>[10]<br>**Note 1:** The main task in this lesson consisted of having students' participating in a question-and-answer section after they had performed a group presentation. The group presentation was not considered part of the main task because learners prepared for it at home. Therefore, no link could be established between the pre-task in this lesson and the oral presentation. |
| **Pre-task 2** | | |
| **Total** | 7 | **1** |
| **Ratio** | 1 / 7 | |

**EE:** Electrical Engineering **ME:** Mechanical Engineering **[n]:** Number of students **(n):** number of expressions

## Appendix I1

### TLI introduced in pre-tasks / Unit 2 – Lesson 5

| Population | Nouns | Adjectives | Other |
|---|---|---|---|
| EE Students **(2)** | 13 | 8 | 0 |
| ME Students **(8)** | 10 | 21 | 1* |

*Phrase

### TLI-S – Unit 2 / Lesson 5

| Categories | Samples | Number |
|---|---|---|
| *Nouns* | EE: Tantalum/ aluminum capacitor, voltage range, voltage tolerance, leakage current, cost, size<br>ME: cost, corrosion resistance, strength, workability, conductivity | EE: 7 / 13<br>ME: 4 / 10 |
| *Adjectives* | EE: higher, stabler, smaller, reverse, better, cheaper, lower<br>ME: lower, high | EE: 6 / 8<br>ME: 2 / 21 |
| *Other* | Effect on foods | ME: 1 / 1 |

### TLI introduced in pre-tasks / Unit 2 – Lesson 6

| Population | Nouns | Adjectives | Adverbs | Verbs | Other |
|---|---|---|---|---|---|
| EE Students **(9)** | 8 | 8 | 4 | 3 | 3 |
| ME Students **(1)** | 11 | 6 | 4 | 3 | 3* |

*Conjunctions (because, given that, considering that)

### TLI-S – Unit 2 / Lesson 6

| Categories | Samples | Number |
|---|---|---|
| *Nouns* | EE: capacitor, voltage, size, disadvantages, advantages, stability<br>ME: steel, corrosion resistance, force, material, advantage, strength, disadvantage, aluminum | EE: 6 / 8<br>ME: 8 / 11 |
| *Adjectives* | EE: aluminum, tantalum, high, small, larger, low, more expensive<br>ME: stainless, heavier, higher | EE: 7 / 8<br>ME: 3 / 6 |
| *Other* | EE: recommend (v) usually (adv) | EE: 1 / 3 |

## Appendix I2

### TLI introduced in pre-tasks / Unit 2 – Lesson 7

| Population | Nouns | Adjectives | Adverbs | Verbs | Other |
|---|---|---|---|---|---|
| EE / ME Students **(11)** | 17 | 0 | 1 | 3 | 4 |

### TLI-S – Unit 2 / Lesson 7

| Categories | Samples | Number |
|---|---|---|
| *Nouns* | Components, materials, aesthetics | 3 /17 |
| *Verbs* | Suggest, recommend | 2 / 3 |
| *Other* | Best regards | 1 / 4 |

Note: Students used target language from previous lessons (See Appendix C3) Main Task: Writing an email

### TLI introduced in pre-tasks / Unit 2 – Lesson 8

| Population | Nouns | Adjectives | Adverbs | Verbs | Other |
|---|---|---|---|---|---|
| EE Students **(5)** | 12 | 10 | 0 | 3 | 3 |
| ME Students **(2)** | 16 | 8 | 0 | 2 | 3 |

*Conjunctions (although, because of, considering that, due to)

### TLI-S – Unit 2 / Lesson 8

| Categories | Samples | Number |
|---|---|---|
| *Nouns* | EE: stability, applications, ripple, DC power, signal, power supply<br>ME: corrosion resistance, conductivity, applications | EE: 5 / 12<br>ME: 3 / 16 |
| *Adjectives* | EE: ideal, expensive<br>ME: ideal, high, lighter | EE: 2 / 10<br>ME: 3 / 8 |
| *Other* | EE: considering that, used in<br>ME: considering that, because | EE: 2 / 3<br>ME: 2 / 3 |

## Appendix I3

### TLI introduced in pre-tasks / Unit 3 – Lesson 9

| Population | Nouns | Verbs | Adjectives | Other |
|---|---|---|---|---|
| EE / ME Students **(9)** | 18 | 8 | 1 | 0 |

### TLI-S – Unit 3 / Lesson 9

| Categories | Samples | Number |
|---|---|---|
| *Nouns* | Figure, pie chart, components, motor, processes, model | 6 /18 |
| *Verbs* | Explain, show, consist of, represent | 4 / 8 |
| *Adjectives* | - | 0 |

### TLI introduced in pre-tasks / Unit 3 – Lesson 10

| Population | Nouns | Verbs | Adjectives | Other |
|---|---|---|---|---|
| EE / ME Students **(4)**** | 2 | 5 | 0 | 0 |

**Zoom only allowed to record one breakout room. Therefore, only the participation of four students was recorded.

### TLI-S – Unit 3 / Lesson 10

| Categories | Samples | Number |
|---|---|---|
| *Nouns* | empathy | 1 / 2 |
| *Verbs* | Agree, believe | 2 / 5 |
| *Adjectives* | - | 0 |

**Note 1**: Target language that was considered too basic was not taken into account (watch, listen, do, understand).

**Note 2**: The main task was a listening exercise. Language from pre-tasks was very limited and involved mainly expressions for interaction (useful language) rather than vocabulary related to the content of the video.

## Appendix I4

### TLI introduced in pre-tasks / Unit 3 – Lesson 11

| Population | Nouns | Adjectives | Conjunctions | Other |
|---|---|---|---|---|
| EE / ME Students **(9)** | 3 | 17 | 7 | 1 |

### TLI-S – Unit 3 / Lesson 11

| Categories | Samples | Number |
|---|---|---|
| *Nouns* | materials | 1 / 3 |
| *Adjectives* | Practical, efficient | 2 / 17 |
| *Conjunctions* | As a result, for this reason | 2 / 7 |

### TLI introduced in pre-tasks / Unit 3 – Lesson 12

| Population | Phrases |
|---|---|
| EE / ME Students **(10)** | 7 |

**Note:** Students were provided with phrases to be used at the end of a formal presentation. (See Appendix D4)

### TLI-S – Unit 3 / Lesson 12

| Categories | Samples | Number |
|---|---|---|
| *Phrases* | Maybe I can help you (answer that for you) | 1 / 2 |

**Note 1**: The main task consisted of a question-and-answer section at the end of a formal presentation. The group's presentation was not considered part of the main task because students prepared it at home.

**Note 2:** No link can be established between pre-tasks and the students' presentation.

## Appendix J

## Self-Assessment Instrument 1

***Note for readers: In the online form, students were able to write an unlimited number of sentences when explaining their answers***

Please take a moment to reflect on your performance during the class "Advising Clients." Your answers will help the course instructors in creating future classes and gathering data for their research project. Your answers are anonymous and will not affect your grade in this course.

Instructions: For each number, please mark with an X the extent to which you were able or unable to complete it, from definitely able (fully completed the task) to not at all able (task not performed).

*During the class, I was able to…*

| | Definitely able | Somewhat able | Not very able | Not at all able |
|---|---|---|---|---|
| **1.** describe a capacitor or metal. | | | | |
| **2.** explain advantages and disadvantages of a capacitor or metal. | | | | |
| **3.** give recommendations to a client regarding a capacitor or metal. | | | | |
| **4.** participate actively in the planning and practicing of an oral report. | | | | |
| **5.** present an oral report to the class as part of a team. | | | | |

If you marked "Somewhat able," Not very able," or Not at able" for any of the indicators, please explain your choices here by giving reasons or examples:

_____

_____

_____

_____

_____

_____

## Appendix K
## Self-Assessment Instrument 2.1

***Note for readers: In the online form, students were able to write an unlimited number of sentences when explaining their answers***

Please take a moment to reflect on your performance during the class "Advising Clients." Your answers will help the course instructors in creating future classes and gathering data for their research project. Your answers are anonymous and will not affect your grade in this course.
***Feel free to add your comments in Spanish

Instructions: For each number, please mark with an X the extent to which you were able or unable to complete it, from definitely able (fully completed the task) to not able (task not performed).

| *During the class, I was able to…* | Definitely able | Definitely able but I would like to improve | Somewhat able | Not able |
|---|---|---|---|---|
| **1.** establish a connection between the word "wild" and past experiences. | | | | |

If you marked "Definitely able" please justify your choice by giving reasons or examples:
_____

If you marked "Definitely able but I would like to improve," please justify your choice by giving reasons or examples:
_____

If you marked "Somewhat able," please justify your choice by giving reasons or examples:
_____

If you marked "Not able," please justify your choice by giving reasons or examples:
_____

| *During the class, I was able to…* | Definitely able | Definitely able but I would like to improve | Somewhat able | Not able |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| **2.** identify main ideas from the TED talk | | | | |

If you marked “Definitely able” please justify your choice by giving reasons or examples:

_____

If you marked “Definitely able but I would like to improve,” please justify your choice by giving reasons or examples:

_____

If you marked “Somewhat able,” please justify your choice by giving reasons or examples:

_____

If you marked “Not able,” please justify your choice by giving reasons or examples:

_____

| *During the class, I was able to…* | Definitely able | Definitely able but I would like to improve | Somewhat able | Not able |
|---|---|---|---|---|
| **3.** show understanding of words guessed from context by identifying sequences and expressing opinion | | | | |

If you marked “Definitely able” please justify your choice by giving reasons or examples:

_____

If you marked “Definitely able but I would like to improve,” please justify your choice by giving reasons or examples:

_____

If you marked “Somewhat able,” please justify your choice by giving reasons or examples:

_____

If you marked “Not able,” please justify your choice by giving reasons or examples:

_____

## Appendix L
## Self-Assessment Instrument 2.2

***Note for readers: In the online form, students were able to write an unlimited number of sentences when explaining their answers***

Please take a moment to reflect on your performance during the class "Advising Clients." Your answers will help the course instructors in creating future classes and gathering data for their research project. Your answers are anonymous and will not affect your grade in this course.
Instructions: For each number, please mark with an X the extent to which you were able or unable to complete it, from definitely able (fully completed the task) to not able (task not performed).

1. During the class, I was able to assess the usefulness of an innovative engineering product by discussing with peers.

___ Definitely able

___ Definitely able, but I would like to improve

___ Somewhat able

___ Not able

To help us plan more effective tasks and activities, please explain why (puede hacerlo en español):

_____

2. During the class, I was able to identify advantages and disadvantages of different engineering products by making inferences.

___ Definitely able

___ Definitely able, but I would like to improve

___ Somewhat able

___ Not able

Please explain why (puede hacerlo en español):

_____

3. During the class, I was able to propose an innovative engineering product to a specific audience by using persuasive language.

___ Definitely able

___ Definitely able, but I would like to improve

___ Somewhat able

___ Not able

Please explain why (puede hacerlo en español):

_____