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The what – how – why of English in the workplace: perspectives from Turkish engineers

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ABSTRACT

This research focuses on the role of English for engineers in the workplace in Turkey, with the aim of informing engineering programs to better equip prospective engineers with relevant workplace communication skills. To this end, it identifies how engineers perceive the importance of English, how frequently they use it for different tasks, and whether the perceived role and importance of English varies according to the type of company where engineers work. Findings show that English is perceived as relatively unimportant for daily tasks but more important for recruitment and promotion. Additionally, they highlight the importance of receptive skills in comparison to productive skills. Finally, they suggest that the type of company is significantly related to the status of English and how it is used in the workplace. Findings will contribute to engineering course designers in Turkey through detailed profiling of the role of English as perceived by Turkish engineers.

Introduction

Research has shown that while engineers may be equipped with the necessary technical skills to do their job, they generally lack non-technical or 'soft' skills such as communication, which has been identified as a highly important non-technical skill (OECD 2018), and often lacking (Clokie and Fourie 2016; Hedberg 2001; Markes 2006; Ramadi, Ramadi, and Nasr 2016; Sageev and Romanowski 2001). Such a gap between graduate capabilities and workplace requirements potentially leads to decreased employment opportunities (OECD 2017).

One of the ways to explore skills gaps is through employer surveys and interviews, which can highlight reasons for such gaps (OECD 2017). One of these reasons is inadequate understanding of the needs of the workplace by higher education institutions, which can be due to a lack of cooperation between higher education institutions and the industry, or higher education institutions' misjudging industry needs (Gilbuena et al. 2015; König and Ribarić 2019). In either case, it is common for university graduates' competences to not match industry expectations, but the 'blame-game' between the industry and the higher education regarding this gap is still not coming to an end (Hurrell 2016).

Such a skills gap can be addressed through educational programs by higher education institutions that reflect the needs of the industry, thus equipping students with relevant soft skills as well as technical skills to make them more employable (Succi and Canovi 2020). In order to do so,

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it is necessary to understand the conditions in the market so as to inform higher education institutions with relevant data for the improvement of their programs. Therefore, this study aims to explore the current needs of the workplace in the Turkish context in one of the most prominent soft skills, communication, and to provide engineering education programs with relevant workplace data on engineering communication accordingly. We will begin with a brief exploration of previous research on the employability of engineers and the role of soft skills, especially communication skills. We will then explore the perceived importance and frequency of English and related communicative tasks in the Turkish workplace, for which we provide our findings and discussion.

Engineering education and employability

In the context of higher education, employability is 'a set of achievements, understandings and personal attributes that make individuals more likely to gain employment and be successful in their chosen occupations' (Knight and Yorke, 2004, 9). In this respect, for an engineer to be employable upon graduation, they must possess hard skills such as the formal qualifications obtained through an engineering degree. Additionally, an engineer also needs soft or professional skills such as interpersonal and communicative skills, teamwork and negotiation. While hard skills are easily measured on the basis of formal qualifications, soft skills are more difficult to assess as they are not generally acquired through formal credentials (Nilsson 2010).

As Winberg et al. (2020) argue, soft skills are an important complement to hard skills, and thus contribute to engineers' all-round employability. A similar suggestion was made by Robles (2012), who viewed hard and soft skills as interdependent rather than separate entities. However, in order for higher education to appropriately adapt their curricula to support engineers' development of soft skills, and thus their employability, understanding of the needs of the industry clearly is necessary (Arlett et al. 2010). An example of this comes from Mississippi State University. In order to enhance employability of engineering graduates, a Mechanical Engineering System Design course was redesigned to address professional skills expected of graduates by the industry. Reported improvements following the course included communication, teamwork, project management and leadership skills, all of which were in high demand by the industry (Liu 2017). Similarly, in response to the need in the industry for engineers with high communicative competence, Helsinki University of Technology developed a course called organisational communications, whose main purpose was to equip engineering students with interaction skills for the workplace (Lappalainen 2010).

Addressing the Right soft skill(s) in engineering programs

Although current research on soft skills is vast, it is also context-dependent. This means that there is little agreement as to what is actually meant by 'skills' and what these skills entail. Additionally, measuring to what extent a mismatch exists between the expectations of the industry and the current workforce's acquired skills is another challenge (OECD 2017). König and Ribarić (2019) showed that one of the reasons for this mismatch is that there is usually not enough cooperation and communication between higher education institutions and the workplace. In turn, teaching these skills to engineering students at universities is a challenge due to differing definitions and lack of empirical data from the workplace (Gilbuena et al. 2015).

The most commonly cited soft skills in research are communication, teamwork, leadership, and problem solving (King 2012; National Academy of Engineering 2018; Nilsson 2010; OECD 2017; Robles, 2012; Teng et al. 2019; Winberg et al. 2020). Currently, the importance of soft skills in engineering education is rising. For example, the Accreditation Board for Engineering and Technology (ABET) refers to soft skills in their list of necessary core student outcomes in an engineering program (ABET 2019). Among these, communication skills stand out as the most commonly cited graduate trait in the literature (Osmani et al. 2019) and required by employers (Crawford and Dalton 2016; Male, Bush, and Chapman 2011).

There are several factors that turn effective communication skills from a soft skill to a professional skill for an engineer (Paretti, McNair, and Leydens 2014). Firstly, the importance of communication skills for an engineer stems from the fact that they rely heavily on communicative competence to do their jobs properly both in their native language and in English, in a world of global business (Darling and Dannels 2003). Furthermore, more and more international companies use English as their medium of communication, even if they are located in non-English speaking countries (Borzykowski 2017); therefore, an engineer with good communication skills, especially in English, has increased chances of employment in both in English-speaking and non-English speaking countries (Cambridge 2016; Chavez et al. 2017; Kassim and Ali 2010; Markes 2006).

Relevant communication skills for employability of engineers

The importance of communication skills for an engineer may sometimes hold more weight than technical competences in employability. For example, company executives in the Middle East and North Africa (MENA) region reported low levels of employability among engineers due to their poor communication skills. These executives reported that engineers had serious difficulty expressing themselves in spoken and written means of communication in different occasions (Ramadi, Ramadi, and Nasr 2016). A similar case was reported in India, where employers mainly focus on communicative competences in English at campus recruitment events for engineering graduates (Clement and Murugavel 2015; Gokuladas 2011). According to Pais-Montes, Freire-Seoane, and López-Bermúdez (2019), the same skills gap is also seen in Europe. In their study exploring employability traits engineers need in their transition to the workplace, they suggested that engineers in the Spanish context were graduating from higher education with considerable weaknesses in their English communication skills. The researchers referred to English as the most critical employability trait in need of urgent curricular improvement in engineering education in Spain. West (2005) defined such a gap in engineers' professional traits as one of the older challenges in engineering education that made its way into the twenty first century. This gap in engineering education requires special attention as employers are not only looking for proficiency in English for general purposes, but also skills in relevant communicative competences for the workplace in the field of engineering (Ting et al. 2017).

Developing a general understanding of workplace English necessitates defining the status of English in different contexts. According to Kachru, Kachru, and Nelson (2006), the status of English in the world is mainly grouped into three categories. The first category involves countries where English is spoken as the first language (L1), such as the UK and USA, and is called the inner circle. The second group, referred to as the outer circle, involves countries such as India and Malaysia where English has a colonial history or official status as a second language (ESL). Finally, the third group involves contexts such as Turkey, the Middle East or much of Europe, where English is a foreign language (EFL) and does not have any official status nor a historical background. The contextual differences related to the status of English in the world are important as there is evidence from research that the English language communicative requirements of the workplace may vary between L1, ESL and EFL contexts. This may mean prioritising certain language skills (i.e. speaking, writing, reading, listening) over others, depending on the context. For example, some research has identified speaking as the most important language skill in L1 and ESL contexts due to the fact that it helped in job interviews and with promotion (Crosling and Ward 2002; Kassim and Ali 2010; Ting et al. 2017). In research in EFL contexts, however, reading stood out as the most important language skill, as it would enable employees to sustain their professional competency by accessing resources related to their professional life and the workplace, which were available only in English (Cambridge 2016; Rajprasit et al. 2014). In general, research on the most important language skill for the workplace has shown varying results, sometimes even within the same country, because communication skills for the

workplace are context-dependent (Coffelt, Grauman, and Smith 2019). For example, Spence and Liu (2013) identified writing as the most important skill in the workplace in Taiwan, while Rajprasit et al. (2014) stated reading as the most important in the same context. A similar case comes from Korea in Kim (2013), according to whom Korean engineers and engineering candidates differed in their views of the most important language skill. While professional engineers rated the ability to write as the most important, new engineering graduates rated use of English for oral communication as most important for the workplace.

Table 1 combines findings on core language skills from studies that explored the necessary communicative skills for the workplace. No specific task related to listening skills was mentioned in the literature reviewed, hence it is not included in the overview.

The Turkish context

Turkey is a free-market economy that mainly consists of industry and service sectors while the agricultural sector also holds prominence. The country applied to be a member of the European Economic Community in 1987 and the European Union declared Turkey eligible to be a member in 1999 (European Commission 2021). According to the World Bank, the country's gross domestic product (GDP) equaled 761.8 US$ billion in 2020, with 9,225.00 US$ per capita (World Bank 2021).

According to the Turkish Council of Higher Education (YÖK 2000), engineering education in Turkey has a history of more than two hundred years. By the number of students enrolled in a bachelor's degree, there are 437,660 students enrolled in engineering programs offered in 180 universities out of 207 in total (YÖK 2021a). To be enrolled in an engineering degree on graduating high school, there is a certain procedure for a Turkish student. They must take the university entrance exam having completed the science track in high school. After the exam, they choose an engineering program and are placed in one of their choices according to their ranking against all other candidates. An engineering program may be offered fully in Turkish, or either fully or partially through English-Medium Instruction (EMI). If the preparatory English education is compulsory for the chosen engineering degree, the student needs to show proof of English language proficiency and start with faculty courses or take a placement exam and study English before joining their engineering program. According to English First English Proficiency Index (EF-EPI) (2018), Turkish engineering candidates fall considerably behind the world average in proficiency in English compared to engineers in other countries. Table 2 gives information about the top twenty engineering programs in Turkey based on university entrance examination scores in 2020 as well as how they incorporate English communication courses in their core engineering program.

The top twenty engineering programs in Turkey are from eight universities, and only one of those universities lacks any core English courses for prospective engineers. English courses for engineers in the majority of the universities shown in Table 2 are academically oriented except for Özyeğin University and the University of Economics and Technology (TOBB), which offer English courses catering more for workplace needs than academic needs. The technical communication course in the Özyeğin University engineering programs aims to develop students'

Table 1. Communicative tasks perceived to be the most frequent in the workplace.

Writing	Speaking	Reading
• E-mails (Evans 2010; Spence and Liu 2013) • Writing business proposals (Kassim and Ali 2010)	• Presentations, meetings and problem-solving tasks (Thomas, Piquette, and McMaster 2016) • Formal meetings and negotiations (Evans 2010) • Teleconferencing and giving oral presentations (Kassim and Ali 2010)	• E-mails (Evans 2010; Spence and Liu 2013) • Technical materials (Chew 2005) • For research (Cambridge 2016; Chew 2005; Rajprasit et al. 2014)

Table 2. Top twenty engineering programs in Turkey (2020) and how they incorporate English communication courses into their curriculum.[1]

Rank	University	Engineering Program	Medium	Core English Communication Courses in The Program
1	Boğaziçi	Computer	English	No
2	Koç	Computer	English	Basic Academic Writing (Year 1) Academic Writing for Science & Technology (Year 2)
3	Koç	Electrical - Electronics	English	Basic Academic Writing (Year 1) Academic Writing for Science & Technology (Year 2)
4	Bilkent	Computer	English	English and Composition I & II (Year 1) Technical Report Writing and Presentation (Year 3)
5	Boğaziçi	Electrical - Electronics	English	No
6	Bilkent	Electrical - Electronics	English	English and Composition I & II (Year 1) Technical Report Writing and Presentation (Year 3)
7	Koç	Industrial	English	Basic Academic Writing (Year 1) Academic Writing for Science & Technology (Year 2)
8	Middle East Technical	Computer	English	English for Academic Purposes I & 2 (Year 1) Academic Oral Presentation Skills (Year 2)
9	Boğaziçi	Industrial	English	No
10	Sabanci	Faculty of Engineering and Natural Sciences	English	Academic Literacies (Year 1)
11	Koç	Mechanical	English	Basic Academic Writing (Year 1) Academic Writing for Science & Technology (Year 2)
12	Istanbul Technical	Computer	English	English I & II (Year 1 and 2)
13	Middle East Technical	Electrical – Electronics	English	English for Academic Purposes I & 2 (Year 1) Academic Oral Presentation Skills (Year 2)
14	Özyeğin	Computer	English	English 1 & 2 (Year 1) Technical Communication (Year 3)
15	Boğaziçi	Mechanical	English	No
16	Economics & Technology	Computer	Partly in English	Writing Skills in English (Year 1) English Presentation Skills (Year 2)
17	Bilkent	Industrial	English	English and Composition I & II (Year 1) Technical Report Writing and Presentation (Year 3)
18	Economics & Technology	Electrical – Electronics	Partly in English	Writing Skills in English (Year 1) English Presentation Skills (Year 2)
19	Istanbul Technical	Electronics and Communication	English	Information Not Available on University Website
20	Bilkent	Mechanical	English	English and Composition I & II (Year 1) Technical Report Writing and Presentation (Year 3)

written and verbal communication skills, but the course syllabus shows a more specific emphasis on skills in business English rather than engineering English, such as preparing quotations, networking presentations and persuasive sales presentations (Özyeğin Üniversitesi Ders Planı 2021). Similarly, the TOBB course catalogue states that the English presentation skills course develops giving presentations and prepares engineers for job interviews (TOBB ETU Department of Foreign Languages 2021).

Engineering students in Turkey also learn about the workplace through compulsory internships, whose purpose is to help engineering students gain occupational knowledge, skills and attitudes, and learn about the industry (YÖK 2021b). Despite the mandatory exposure of engineering students to the workplace in such programs, we could not identify any relevant research on students' internship experiences in Turkey. Therefore, our understanding of the

contribution of engineering internship programs to the employability of engineers in Turkey is limited.

The study

The purpose of this study is primarily to provide an understanding of workplace English requirements for engineers in Turkey. Specifically, we explore to what extent English is perceived to be an important workplace skill for engineers, and which communicative skills and tasks are seen as most relevant. Additionally, this study further expands our understanding of the communicative requirements of the workplace by exploring whether specific communicative expectations from engineers differ based on the type of workplace (national vs. multinational). Findings will contribute to initiatives in the improvement of engineering education programs as currently very few universities in Turkey address communication skills as required from engineers in the workplace. The questions that this research focuses on are:

1) To what extent is English perceived as important for engineers in the workplace in Turkey?
2) What is the frequency of English in different communicative tasks?
3) How do the perceived importance and frequency of communication in English vary across different types of company?

Method

Participants

Participants were chosen based on a purposive sampling strategy. In order to ensure that English was part of the workplace, the target companies in the sampling stage contained only those that took part in international operations such as import, export or services. Participants from three types of companies were involved, namely private national companies (PN), private multinational companies (PM), and joint-venture multinational companies (JM). The Human Resources (HR) department in each company distributed the survey to engineers, as well as to managers and HR personnel who had engineers on their team. All engineers and managers had at least a bachelor's degree in engineering, some with more advanced degrees. The reason managers were included is due to the fact that they worked closely with engineers and oversaw their work. Additionally, HR professionals had a thorough understanding of the recruitment procedure in each company, thus were involved. A total of 149 participants took part in the study.

At the time of data collection, one of the participant companies was in the top ten, three between ten and twenty, and three between twenty and one hundred largest companies by revenue in Turkey (Fortune 500 Turkey, 2020). While participant companies in the manufacturing sector such as automotive, household items, etc. were mainly involved in export activities, companies whose main activities did not involve manufacturing were either multinational companies operating in the service industry or national companies whose services depended on international cooperation. Detailed information related to the number of participants, their position and years of experience per company, company type, and level of education is displayed in Table 3.

Questionnaire

Data were collected by means of a self-administered questionnaire adapted from Kassim and Ali (2010), who had developed their questionnaire with data from previous research studies and feedback from engineering lecturers and industry professionals to ensure validity. Changes made to the survey for the purpose of this study included contextual information such as the language of workplace communication (i.e. from Malay, Mandarin, etc. to Turkish) and types of companies (no government-based companies in the Turkish context). All the other questions were generic in their nature

Table 3. Company – Type of Company – Position of Participants – Participants' Work Experience in Years per Company.

Company	Main Business	Location	Type	Position	Total Years of Work Experience						Participants Total	Company Total
					≤2	3–4	5–6	7–8	9–10	≥11		
1	Telecommunications	Ankara	PN	Engineer		1		3	3	7	14	19
				Manager				1	1	3	5	
2	Household Items Manufacturing	Manisa	PN	Engineer	4	2	2			1	9	10
				HR						1	1	
3	Industrial Power and Automation Systems	Istanbul	PM	Engineer		1	1	3	3	3	11	16
				Manager					1	4	5	
4	Automotive Manufacturing	Istanbul	JM	Engineer		3	1				4	9
				Manager				1		2	3	
				HR					1	1	2	
5	Information Systems	Istanbul	JM	Engineer			1	2	2	4	9	13
				Manager						3	3	
				HR						1	1	
6	Industrial Cords and Fabrics	Kocaeli	PM	Engineer	1	2	1		2	1	7	15
				Manager				1	1	4	6	
				HR				1	1		2	
7	Automotive Manufacturing	Kocaeli	JM	Engineer	3	1	1				5	12
				Manager					1		1	
				HR		2	1	1	1		6	
8	Tractors Manufacturing	Sakarya	JM	Engineer	2		1				2	5
				Manager			1				1	
				HR			1	1			2	
9	Industrial Components	Istanbul	PM	Engineer	2	3	1		4	3	13	16
				Manager			1				1	
				HR			1			1	2	
10	Logistics (Port)	Kocaeli	PN	Engineer						2	2	7
				Manager						4	4	
				HR			1				1	
11	Automotive Manufacturing	Bursa	PM	Engineer	1	1	6	3	2	7	20	26
				Manager				1	1	3	5	
				HR						1	1	
12	Logistics (Port)	Kocaeli	PN	Engineer	1	1	1				3	3
				TOTAL	14	18	21	18	22	56	–	149

and did not require changes. The questionnaire was written in Turkish and English, and participants had the option to choose between these two languages. It was available both online and on paper, and contained two sections. Section A focused on demographic information including company, position, education and experience. Section B focused on information related to English skills needed in the workplace and communicative tasks that engineers were involved in.

The survey contained items which asked the participants to rate their answers on a 5-point Likert-type scale. Each item consisted of ranks of importance, frequency or quality, with higher scores denoting greater applicability. Table 4 below shows the Cronbach's alpha scores of the variables that asked the participants to indicate their choice on a Likert Scale.

The full questionnaire can be found in Appendix A.

Data analysis
Survey data were analyzed in IBM SPSS Version 25, using descriptive and inferential statistics. In descriptive statistics, mean and standard deviation were given. In inferential statistics, we employed analyses of variance (ANOVA) and Scheffé post-hoc tests to test differences between types of companies with a significance level of 5%. ANOVA was used in two different ways. First, we used it to see how participants differed from each other based on company type in overall scores with variables that contained multiple items. Other than this, we used ANOVA to understand how participants differed from each other on item level. We also measured the effect size using eta squared which defines small (η^2=.01), medium (η^2=.06) and large (η^2=.14) effect sizes respectively (Cohen 1988).

Results

In this section, we present our results for each research question. While RQ1 and RQ2 are reported separately, we present RQ3 under each analysis for RQ1 and RQ2 as it explores differences between participants in their responses to RQ1 and RQ2 based on their company type. We begin with how participants perceived the required level of English for the workplace.

Perceived importance of English in the workplace
Required level of English
With respect to the required level of English from prospective engineers for their workplace, participants from different types of companies expressed required levels of English from average to a good level. Table 4 displays the mean responses and standard deviations (SD) for this item per company type. Table 5.

ANOVA showed that the three types of companies differed from each other significantly in how participants perceived the required level of English for their companies (F(146,2) = 4.270; p= .016;

Table 4. Reliability Statistics.

Item	Cronbach's alpha (n=149)
Importance: how English communication skills contribute to engineers' careers in terms of recruitment, promotion and daily tasks	Items: 3 alpha: .702
Importance: four language skills	Items: 4 alpha: .878
Frequency: speaking tasks	Items: 13 alpha: .942
Frequency: writing tasks	Items: 8 alpha: .938
Frequency: listening tasks	Items: 5 alpha: .932
Frequency: reading tasks	Items: 2 alpha: .859

Table 5. Mean scores of the required level of English (1: poor, 5: excellent).

	PN (n=39)		PM (n=50)		JM (n=60)		TOTAL (N=149)	
	M	SD	M	SD	M	SD	M	SD
Level of English	3.69	0.655	4.02	0.589	4.02	0.567	3.93	0.611

$\eta^2 = .055$). According to Scheffé post-hoc analysis, participants from PN rated the required level of English significantly lower compared to PM (p=.04) and JM (p=.034). There was no significant difference between PM and JM.

Perceived frequency of English in the workplace. With this variable we wanted to explore to what extent English is part of daily communication in the workplace for a Turkish engineer using two different questions. We asked the engineers to indicate how much daily communication is in English and how frequently engineers need to communicate with each other in English, as can be seen in Table 6.

ANOVA results indicated a significant difference between the participant companies in English for both daily general communication (F(146,2) = 18.472; p< .001; η^2= .202) and among engineers (F(146,2) = 22.014; p< .001; η^2= .232). Scheffé post-hoc analysis revealed that both the frequency of English for daily communication and communication in English among engineers were ranked significantly lower by PN than PM and JM (p<.001 for both types of companies in either case). There was no significant difference between PM and JM in both cases.

Perceived importance of English for particular purposes

The third variable focused on how participants perceived the importance of English for recruitment, promotion, and daily tasks in the workplace. On the variable level, a one-way ANOVA was conducted and we determined that these companies differed significantly from each other (F(2,1) = 23.116; p<.001; η^2=.241). According to our analysis, PN differed significantly from PM and JM (p<.001 for both), but there was no significant difference between PM and JM at the variable level. The mean scores for the perceived importance of English for recruitment, promotion and daily tasks are presented in Table 7.

According to ANOVA, participants from the three types of companies differed significantly in how they viewed the importance of English for recruitment (F(146,2) = 7.411; p=.001; η^2 = .092) promotion (F(146,2) = 22.091; p<.001; η^2 = .232) and daily tasks (F(146,2) = 11.091; p<.001; η^2 = .132), with medium effect sizes for recruitment and daily tasks and a large effect size for promotion (Cohen 1988). Scheffé post-hoc analyses illustrated that PN rated the importance of English

Table 6. Mean scores of *perceived daily frequencies of English daily in the workplace and among engineers* (1: 0-20%, 5:81-100%).

	PN (n=39)		PM (n=50)		JM (n=60)		TOTAL (N=149)	
	M	SD	M	SD	M	SD	M	SD
Daily English	1.28	0.510	2.04	0.903	2.33	0.968	1.96	0.944
Among engineers	2.10	0.940	3.10	1.015	3.32	0.813	2.93	1.040

Table 7. Mean scores of the importance of English for different purposes by type of company (1: not important at all, 5: extremely important).

	PN (n=39)		PM (n=50)		JM (n=60)		TOTAL (N=149)	
	M	SD	M	SD	M	SD	M	SD
Recruitment	3.67	0.982	4.24	0.716	4.25	0.751	4.09	0.841
Promotion	3.13	1.196	4.28	0.701	4.28	0.904	3.98	1.056
Daily Tasks	2.92	0.929	3.60	0.833	3.65	0.685	3.44	0.857
Combined	3.24	0.795	4.04	0.554	4.06	0.597	3.8389	0.731

significantly lower than PM and JM for purposes of recruitment (p=.005 for both), promotion (p<.001 for both PM and JM) and daily tasks (p=.001 for PM and p<.001 for JM). Responses from PM and JM did not differ significantly from each other with regard to any of the above purposes.

Participants also provided open-ended responses to state the advantages of having good communication skills in English. These also highlight how English helps with recruitment, promotion and daily tasks. First of all, English was stated as important for recruitment as it enabled easier adaptation to the workplace for a new engineer. With respect to daily tasks, several participants referred to English as being a key contributor to smooth communication with customers and suppliers as well as access to professional resources. Participants also explained that engineers that can use English effectively in the workplace have better chances of promotion as they do not shy away from giving presentations, expressing their ideas in meetings or taking on responsibilities on multinational teams.

Perceived importance of the four language skills. Participants were asked to state the importance of different language skills for the workplace. A one way ANOVA indicated a significant difference based on company type (F(2,1) = 15.263; p<.001; η^2=.173). It was seen that participants from PN rated the importance of the four language skills significantly lower than PM and JM (p<.001 for both). The ratings given by participants with regard to the importance of the four language skills are displayed in Table 8.

We found significant differences between different types of companies based on the perceived importance of speaking (F(146,2) = 12.566; p<.001; η^2=.147), listening (F(146,2) = 11.524; p<.001; η^2=.136), reading (F(146,2) = 5.647; p=.004; η^2=.072) and writing (F(146,2) = 14.429; p<.001; η^2=.165). Scheffé post-hoc analyses indicated that PN rated the importance of speaking skills (p<.001 for PM and p=.001 for JM), listening skills (p<.001 for PM and p=.001 for JM) and writing skills (p<.001 for PM and p<.001 for JM) significantly lower. For reading skills, PN rated the importance of reading skills significantly lower than PM (p=.005). Other differences were not significant.

Frequency of English in the workplace

With respect to each language skill, participants were given pre-defined tasks and asked to rate their perceived frequency in the workplace. We present them in this section as speaking, writing, listening, and reading tasks.

Speaking tasks

At the variable level consisting of all the speaking tasks mentioned, participants differed from each other significantly (F(2,1) = 3.392; p=.036; η^2=.044) in their perception of the use of speaking tasks. Our analysis showed that while PN rated the use of these tasks significantly lower than JM (p=.0.37), there was no other such difference between any of the participants. Table 9 displays the perceived use of speaking tasks in English, as reported by the participants.

According to ANOVA, there were significant differences between the three types of companies in informal work-related discussions (F(146,2) = 6.726; p=.002; η^2=.084), formal work-related discussions (F(146,2) = 6.466; p=.002; η^2=.081), teleconferencing and videoconferencing (F(146,2) =

Table 8. Importance of four language skills by type of company (1: not important at all, 5: extremely important).

	PN (n=39)		PM (n=50)		JM (n=60)		TOTAL (N=149)	
	M	SD	M	SD	M	SD	M	SD
Reading	3.72	0.857	4.24	0.657	4.08	0.720	4.04	0.761
Listening	3.44	0.852	4.14	0.606	4.02	0.725	3.91	0.774
Writing	3.31	0.950	4.10	0.678	4.08	0.743	3.89	0.851
Speaking	3.33	0.927	4.10	0.580	3.95	0.746	3.84	0.806
Combined	3.45	0.820	4.15	0.547	4.03	0.538	3.92	0.683

Table 9. Perceived use of different speaking tasks (1: 0-20%, 5:81-100%).

	PN (n=39)		PM (n=50)		JM (n=60)		TOTAL (N=149)	
	M	SD	M	SD	M	SD	M	SD
Tele-video conference	2.41	1.251	3.62	1.159	3.55	1.330	3.28	1.330
Phone conversations	2.26	1.186	2.92	1.192	2.93	1.191	2.75	1.191
Formal work-related discussions	2.10	1.142	2.78	1.217	2.97	1.237	2.68	1.237
Giving oral presentations	2.23	1.202	2.64	1.258	2.97	1.245	2.66	1.245
Networking	2.44	1.188	2.68	1.115	2.73	1.181	2.64	1.181
Presenting new ideas	2.44	1.231	2.52	1.111	2.85	1.265	2.63	1.265
Instructions and explanations	2.28	1.234	2.56	1.163	2.77	1.187	2.57	1.187
Handling suppliers - subcontractors	3.21	1.341	1.94	1.114	2.63	1.276	2.55	1.276
Building new relationships	2.28	1.075	2.58	1.197	2.62	1.195	2.52	1.195
Conflict resolution	1.95	1.191	2.26	1.139	2.67	1.234	2.34	1.234
Teamwork	1.85	1.040	2.22	1.130	2.33	1.171	2.17	1.171
Informal work-related discussions	1.44	0.754	2.16	1.037	1.95	0.976	1.89	0.976
Informal social conversations	1.64	0.932	1.86	0.926	1.80	0.936	1.78	0.936
Combined	2.19	0.903	2.52	0.860	2.67	0.932	2.50	0.915

13.035; $p<.001$; $\eta^2=.152$), giving oral presentations ($F(146,2) = 4.334$; $p=.015$; $\eta^2=.056$), telephone conversations ($F(146,2) = 4.807$; $p=.01$; $\eta^2=.062$), handling suppliers and contractors ($F(146,2) = 12.727$; $p<.001$; $\eta^2=.148$), and conflict resolution ($F(146,2) = 4.353$; $p=.015$; $\eta^2=.056$). Scheffé post-hoc test results suggested that PN rated the frequency of speaking for informal work-related discussions ($p=.002$), formal work-related discussions ($p=.032$), teleconferencing and video-conferencing ($p<.001$), and telephone conversations ($p=.03$) significantly lower than PM; and informal work-related discussions ($p=.032$), formal work-related discussions ($p=.003$), teleconferencing and videoconferencing ($p<.001$), giving oral presentations ($p=.015$), telephone conversations ($p=.02$) and conflict resolution ($p=.017$) significantly lower than those from JM. Participants from PN rated the perceived use of handling suppliers and contractors ($p<.001$) significantly higher than PM.

Writing tasks. Regarding the perceived use of writing tasks, participants differed significantly from each other ($F(2,1) = 10.065$; $p<.001$; $\eta^2=.121$). Specifically, PN rated the use of writing tasks significantly lower than PM ($p=.034$) and JM ($p<.001$). Participants' responses on the perceived use of writing tasks are reported in Table 10.

On the item level, one-way ANOVA results highlighted significant differences between companies in terms of how participants perceived the use of memos ($F(146,2) = 5.667$; $p=.004$; $\eta^2=.073$), e-mails ($F(146,2) = 10.584$; $p<.001$; $\eta^2=.127$), meeting minutes ($F(146,2) = 7.415$; $p=.001$; $\eta^2=.092$), reports ($F(146,2) = 10.507$; $p=.001$; $\eta^2=.087$), presentation slides ($F(146,2) = 11.452$; $p<.001$; $\eta^2=.136$), business proposals ($F(146,2) = 6.951$; $p=.001$; $\eta^2=.087$) and process descriptions ($F(146,2) = 9.601$; $p<.001$; $\eta^2=.116$). It can be seen in the Scheffé post-hoc analyses that PN rated the use of e-mails ($p=.001$)

Table 10. Perceived use of different writing tasks (1: 0-20%, 5:81-100%).

	PN (n=39)		PM (n=50)		JM (n=60)		TOTAL (N=149)	
	M	SD	M	SD	M	SD	M	SD
Slides	2.77	1.327	3.54	1.092	3.93	1.163	3.50	1.266
E-mails	2.59	1.312	3.56	1.198	3.63	1.073	3.34	1.255
Reports	2.64	1.347	3.24	1.080	3.58	1.266	3.22	1.278
Process Descriptions	2.41	1.292	2.96	1.293	3.57	1.307	3.06	1.372
Business Proposals	2.59	1.371	2.84	1.267	3.53	1.346	3.05	1.379
Meeting Minutes	2.23	1.180	2.74	1.103	3.22	1.403	2.80	1.305
Formal Letters	2.18	1.295	2.57	1.472	2.82	1.408	2.57	1.415
Memos	1.74	1.069	2.31	1.245	2.58	1.279	2.27	1.254
Combined	2.39	1.075	2.98	0.992	3.36	1.067	2.98	1.107

and presentation slides ($p=.011$) significantly lower than PM; and memos ($p=.004$), e-mails ($p<.001$), reports ($p=.001$), presentation slides ($p<.001$), business proposals ($p=.003$), and process descriptions ($p<.001$) significantly lower than JM.

Listening tasks. With respect to the perceived use of listening tasks at the variable level, there was a significant difference ($F(2,1) = 3.574$; $p<.031$; $\eta^2=.047$) between participants in the one way ANOVA. However, Scheffé post-hoc analysis did not yield a significant difference. Participants' responses on the perceived use of listening tasks in the workplace are reported in Table 11.

Following a one-way ANOVA on the item level, we explored significant differences between the three types of companies in terms of perceived use of English in meetings ($F(146,2) = 3.914$; $p=0.022$; $\eta^2=0.051$), presentations ($F(146,2) = 3.488$; $p=.033$; $\eta^2=.046$), receiving instructions ($F(146,2) = 3.140$; $p=.046$; $\eta^2=.041$) and technical trainings ($F(146,2) = 4.053$; $p=.019$; $\eta^2=.053$). Scheffé post-hoc analyses displayed that participants from PN rated the use of listening in meetings ($p=.024$) and in presentations ($p=.039$) significantly lower than JM and listening in technical trainings ($p=.029$) significantly lower than PM.

Reading tasks. Neither one-way ANOVA nor Scheffé post-hoc analyses at the variable level produced significant differences between participants in terms of how they perceived the use of reading tasks in general. Participants' responses on the perceived use of reading tasks are given in Table 12.

There was no significant difference between how the participants from the three types of companies rated the use of reading tasks on the item level.

Discussion

In this section we discuss our findings for RQ1 and RQ2 separately, while referring to RQ3 in both.

Importance of English for engineers

Our findings suggest that participants from private national companies (PN) rated the necessary level of English for their own workplace as being around the average level, whereas participants from companies with a multinational structure (PM and JM) expressed that their workplace required a good level of English. In line with this, participants from PN also expressed that they

Table 11. Perceived use of different listening tasks (1: 0-20%, 5:81-100%).

	PN (n=39)		PM (n=50)		JM (n=60)		TOTAL (N=149)	
	M	SD	M	SD	M	SD	M	SD
Presentations	2.82	1.254	3.34	1.239	3.47	1.186	3.26	1.242
Meetings	2.72	1.297	3.22	1.266	3.42	1.139	3.17	1.249
Technical Trainings	2.67	1.325	3.40	1.278	2.88	1.236	3.00	1.300
Receiving Instructions	2.38	1.206	3.00	1.278	2.92	1.211	2.81	1.250
Face to Face Convers.	2.41	1.292	2.92	1.441	2.98	1.242	2.81	1.337
Combined	2.60	1.165	3.18	1.166	3.13	1.03	3.01	1.131

Table 12. Perceived use of different reading tasks (1: 0-20%, 5:81-100%).

	PN (n=39)		PM (n=50)		JM (n=60)		TOTAL (N=149)	
	M	SD	M	SD	M	SD	M	SD
Manuals and Instructions	3.41	1.446	3.84	.976	3.68	1.321	3.66	1.255
Reports	3.21	1.454	3.56	1.013	3.70	1.183	3.52	1.217
Combined	3.30	1.384	3.70	0.904	3.69	1.172	3.59	1.157

hardly ever used English in daily communication at work whereas according to participants from PM and JM, English had more prominence in daily communication. However, one point to note in the results is the higher frequency of English between engineers in all three types of companies, who expressed about a fifty percent higher frequency of English among engineers than English in daily communication. As a reminder, our study did not limit communication to oral skills. This increase may be attributed to a variety of factors, including email communication (Evans 2010; Spence and Liu 2013), reading technical documents and doing research for engineering work (Chew 2005).

It was also found that participants from all three types of companies rated the importance of English as highest for recruitment, which is consistent with earlier findings (Cambridge 2016; Chavez et al. 2017; Kassim and Ali 2010; Markes 2006), suggesting that English contributes positively to employability of engineers in the EFL context of Turkey as it does elsewhere. In other areas, however, differences could be seen between the Turkish EFL setting and L1 contexts. Specifically, English for daily tasks was given the lowest score in our study, while in the L1 setting of Australia, English communication skills were reported as one of the key factors for an engineer to survive in the workplace (Crosling and Ward 2002). Furthermore, our findings illustrate a higher contribution of English to career prospects such as new employment opportunities than to the way engineers do their job, which is similar to ESL contexts such as Malaysia, India and the Philippines but not to L1 contexts (Chavez et al. 2017; Gokuladas 2011; Kassim and Ali 2010).

Looking at general scores, therefore, it can be argued that the status of English in EFL and ESL contexts is more of a means of employment rather than of doing business. However, deeper analysis of our findings regarding the importance of English in recruitment, promotion and daily tasks calls for a more careful approach in interpreting the results. While recruitment received the highest overall score for the importance of English, our analysis based on types of companies demonstrated that participants from multinational companies rated the importance of English for promotion as highest, but the effect of participants from PN lowered the average score substantially. When PM and JM scores were taken together without PN, the highest importance of English in one's career phases shifts from recruitment to promotion, this time aligning with findings from an L1 context like in Crosling and Ward (2002), pointing to more promotion opportunities that having good communication skills creates in a multinational workplace.

Another area of focus in the current study is the most important language skill for the workplace. According to our analysis, participants from all three types of companies rated receptive skills, specifically reading, as the most important, similar to what Cambridge (2016) suggested for countries without an official status of English like Turkey. On the other hand, the fact that speaking was ranked as the least important skill is surprising. This is a clear indication of Turkish engineers having different communicative needs in an EFL context compared to ESL contexts such as Malaysia, in which speaking was ranked as the most important language skill in the workplace (Kassim and Ali 2010; Ting et al. 2017).

In the next section, we specify our discussion to the kind of tasks ranked as important for the workplace, which will be guiding for course designers in terms of understanding specific needs of the workplace in relation to each language skill.

English in different communicative tasks

According to our analysis, reading manuals and instructions was the most frequent reading task in the workplace. This is in line with Chew (2005) but differs from Cambridge (2016), who suggested that employees relied on reading skills the most for keeping up with the recent trends related to their field of work. Although JM participants rated the frequency of reading reports higher than manuals and instructions, this was only a slight difference and not significant.

The second most important language skill was listening, which was not mentioned in the previous research reviewed. Overall, the most frequently practiced listening tasks were listening to

presentations and in meetings. However, when different types of companies are examined more closely, we see that participants from PM rated the frequency of listening in technical trainings as among the highest, while PN and JM agree on listening to presentations as the most frequent listening task. Still, listening to a presentation or a technical training may have commonalities for an engineer and such tasks, especially technical trainings, require background technical communicative skills and lexis to be able to follow the input.

Next, the most frequently practiced language task in writing, as reported by participants from all three types of companies, was writing presentation slides followed by writing emails and reports. This finding differs from previous research such as Evans (2010), who mentioned writing e-mail messages as being the most important writing task, and Kassim and Ali (2010), who identified report and proposal-writing as the most important. While our findings also demonstrate the importance of writing emails and reports in English, the highest frequency attributed to writing presentation slides may be due to the fact that professional resources are mainly available in English (Cambridge 2016; Rajprasit et al. 2014). Therefore, rather than translating these materials to the local language, Turkish in this case, engineers may choose to write presentation slides in English in the first place.

With respect to speaking tasks, the findings highlighted teleconferencing and videoconferencing as the most frequent, which was similar to Kassim and Ali's (2010) findings. However, this was the case in multinational companies, not PN. Participants from PN rated handling suppliers and subcontractors as the most frequent speaking task, which is the only area where PN showed a significantly higher frequency of English in a given task compared to a multinational company, PM specifically. The national companies involved in this study were from the manufacturing industry, telecommunications and logistics. A possible explanation for why engineers in national companies use English more with suppliers than PM is that they may be relying on outsourcing operations more, which takes place in a more dynamic environment. Communication in English in the global business world can be with people from a variety of contexts, and suppliers and subcontractors may change according to the needs and priorities of a company, unlike head offices of multinational companies located in another country.

Significance of findings

The findings of our research could be significant for engineering education programs. First of all, in order for engineers to be able to meet the communicative requirements of the workplace, they need high proficiency in general and workplace English, which will help them in job interviews. This distinction is necessary as Ting et al. (2017) states that employers see proficiency in English and having relevant communicative competences for the workplace as different entities. Therefore, general English proficiency may not be adequate for an engineer's career advancement. Prospective engineers also need competence in relevant workplace communication tasks in English, which will help them with daily tasks and promotion, especially in multinational companies. In their current structure, only two engineering education programs in Turkey offer core English communication courses relevant to the workplace to some extent in their programs. As the findings suggest, the fact that English professional communication requirements are not adequately met emerges as an area in need of improvement in engineering education in Turkey.

Secondly, there is a mismatch between what core English courses for engineering programs prioritise and what the workplace needs in terms of specific language skills and tasks. Currently, engineering programs in Turkey place more emphasis on productive skills (i.e. speaking and writing) over receptive skills (i.e. reading and listening). On the contrary, participants reported higher need for receptive skills than productive skills in the workplace. The lower importance attributed to productive skills in the workplace calls for an evaluation of skills prioritised by engineering education programs. While this is not to suggest that productive skills be removed, core courses designed to improve prospective engineers' receptive communication skills need to have more prominent weighting in engineering curricula as they are more relevant for workplace needs. Regarding

reading and listening as the most important skills in the workplace, they do not seem to be a target in engineering education programs in Turkey. For example, our results underline the need for engineers to read technical documents such as manuals and instructions in English but it is unclear to what extent they receive specific training to develop their reading skills in these areas. Similarly, listening skills, especially active listening, was referred to by The Organisation for Economic Co-operation and Development (OECD 2018) as one of the skills with a considerable shortage in OECD countries. This skill is not currently addressed explicitly in engineering education in Turkey. Next, although productive skills are more targeted in engineering education, higher education institutions still do not fully meet the needs of the workplace. For example, there is no clear indication if engineering education programs train students in writing presentation slides, the most frequent writing task in the workplace. Additionally, while tele/videoconferencing and handing suppliers and subcontractors are highly relevant tasks in speaking for the workplace, prospective engineers in Turkish universities do not receive training in these areas. The nature of relevant speaking tasks for the workplace requires course designers to expose engineers to a variety of accents and communication scenarios from around the world and raise their awareness in intercultural communication.

As already shown by König and Ribarić (2019) and Succi and Canovi (2020), our findings also demonstrate that engineering education in Turkey, too, fails to understand workplace requirements in communication skills. We saw that similar findings were also reported in contexts where English is a second or foreign language, such as Spain (Pais-Montes, Freire-Seoane, and López-Bermúdez 2019), Finland (Lappalainen 2010), North Africa and Middle East (Ramadi, Ramadi, and Nasr 2016), India (Gokuladas 2011), Malaysia (Ting et al. 2017), and Bahrain (Thomas, Piquette, and McMaster 2016). It is undeniable that many countries in the world are struggling with engineers' skills gap in workplace requirements for communicative competences. However, action to fill such gaps cannot be taken unless local contextual requirements are understood clearly. Therefore, our study will provide a starting point in Turkey and may be guiding for contexts beyond Turkey in initiatives for developing engineering communication courses in that it provides a detailed description of workplace communicative requirements in a setting that has strong business connections with the rest of the world.

Suggestions for future research

The current study explored why and how English is used in the Turkish workplace by engineers, thus contributing to the understanding of the workplace communicative requirements from them. A further step in analyzing this issue is to investigate to what extent new engineers are able to meet the workplace communicative requirements. We suggest that this topic can be approached in several ways including examining new engineers' communicative competences in English, as perceived both by themselves and their employers evaluating new engineers' workplace communication skills to see how well they can meet the demands of the workplace by using a specially-designed language test, and evaluation of how engineering programs promote workplace English communication skills in different settings.

Conclusion and implications

Turkey acts as a crossroads between Asia, Africa and Europe and has strong economic connections with each. The analyses conducted in this study provide a clear picture of why engineers need English in their careers and shed light on the specific purposes for which the English language is used by engineers in the EFL context of Turkey. The findings of the study reveal important points regarding the importance of English for engineers. Firstly, they show that English plays a major role in employment and career advancement in Turkey rather than meeting daily needs. This suggests that English may have more face value than practical value. Secondly, the most important language skill is reading and the least important is speaking, showing a high contrast with ESL

contexts. In relation to each specific language skill, national companies and multinational companies differ from each other in why they need speaking skills in the workplace, but mostly show a uniform pattern for tasks that require English in other skills. This indicates that type of a company does not automatically reject or denote the importance of English for engineers as all types of companies involved in the study used English for meaningful, but sometimes different purposes. This leads to a call for an understanding of different workplace types when addressing the use of English in the workplace.

These findings have several implications for engineering education programs. To begin with, engineering education in Turkey and beyond, especially in EFL contexts will benefit from teaching English courses on workplace communication because having workplace-relevant communicative competence in English increases employability, an issue so far not addressed in engineering education in Turkey. It was also seen that communicative needs and priorities of the workplace differ between different types of companies. Therefore, higher education institutions may use the findings of this study in designing English for Specific Purposes (ESP) courses to identify which skills and tasks are more relevant for which type of company in their local context. While designing such courses, being aware of local needs and developing learning objectives accordingly would be important steps for curriculum developers as commercially available course packs may not fully suit their needs. Findings are meaningful for engineering education programs in EFL settings because they provide a thorough understanding of workplace communication specific to English as a foreign language.

Our findings also have implications for engineering candidates. It is seen that workplace needs differ from each other depending on type and operations. However, diverse needs and priorities of each type of company may not be met easily through the higher education curriculum due to feasibility and practicality concerns regarding course design and implementation. Therefore, ESP courses in higher education may be limited in terms of addressing the general requirements of the workplace. In such a case, graduates can compensate for any potential lack of communicative skills for the workplace through internships, early work experience and in-service training. Ultimately, such initiatives taken both by the higher education institutions and the graduates themselves will contribute positively to overcoming mismatches between the expectations of the industry and skills with which graduates are equipped. It must be noted that exploring the existence of a gap in engineers' communication skills after they graduate from university is too late and needs attention at an earlier stage in engineering education.

Note

1. To reach details of these universities and their websites, please visit https://yokatlas.yok.gov.tr/

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Ethics approvals

Research clearance was obtained from the ethics committee of Leiden University Graduate School of Teaching.

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Appendix A: The Questionnaire

Section A: personal information

Note: Only item 8 below in section A was used in the results section; therefore, only it is given here under section A to save words.

8. Level of English communication skills that is required in your company

Poor	Basic	Average	Good	Excellent
1	2	3	4	5

Section B: English communication skills

1. In your company, how important are engineering employees' / graduates' English communication skills for the following:

	Not Important at all	Slightly important	Moderately important	Very Important	Extremely Important
a. Recruitment	1	2	3	4	5
b. Promotion	1	2	3	4	5
c. Daily tasks	1	2	3	4	5

2. How important are the following English communication skills to engineers in your company?

	Not Important at all	Slightly important	Moderately important	Very Important	Extremely Important
a. Speaking skills	1	2	3	4	5
b. Listening skills	1	2	3	4	5
c. Reading skills	1	2	3	4	5
d. Writing skills	1	2	3	4	5

3. How frequently is English being used among engineers in your company?

Almost never	Rarely	Sometimes	Often	Almost always
1	2	3	4	5

4. Please indicate the frequency of the language that you use in your company:

	0 - 20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
a. Turkish	1	2	3	4	5
b. English	1	2	3	4	5
c. Other, please specify _____	1	2	3	4	5

5.   Why do you need English at work? Please write skills / tasks according to order of importance (from most important to less important - please write up to ten if possible)
    Example: reading manuals, writing emails to clients / other companies, etc.

a. _____

b. _____

c. _____

d. _____

e. _____

6. Please indicate the frequency of the different English communication skills used:

English Oral Communication (Speaking) used in the company

	0-20%	21-40%	41-60%	61-80%	81-100%
1. Informal work-related discussions and meeting	1	2	3	4	5
2. Formal work-related discussions and meeting	1	2	3	4	5
3. Teleconference / Videoconference	1	2	3	4	5
4. Informal, social conversation	1	2	3	4	5
5. Giving oral presentations	1	2	3	4	5
6. Networking: developing contacts for advice and information	1	2	3	4	5
7. Instructing, explaining and demonstrating	1	2	3	4	5
8. Telephone conversation	1	2	3	4	5
9. Presenting new ideas / alternative strategies	1	2	3	4	5
10. Building relationships	1	2	3	4	5
11. Handling suppliers / subcontractors	1	2	3	4	5
12. Conflict resolution	1	2	3	4	5
13. Team work	1	2	3	4	5
14. Other, please specify _____	1	2	3	4	5

English Written Communication (Writing) used in the company

	0-20%	21-40%	41-60%	61-80%	81-100%
15. Memo	1	2	3	4	5
16. E-mail	1	2	3	4	5
17. Formal letter	1	2	3	4	5
18. Meeting minutes	1	2	3	4	5
19. Reports	1	2	3	4	5
20. Presentation slides	1	2	3	4	5
21. Project / Business proposals	1	2	3	4	5
22. Process descriptions (general / technical)	1	2	3	4	5
23. Other, please specify _____	1	2	3	4	5

English Listening Skills used in the company

	0-20%	21-40%	41-60%	61-80%	81-100%
24. In meetings	1	2	3	4	5
25. During presentations	1	2	3	4	5
26. Face to face conversations	1	2	3	4	5
27. Receiving instructions	1	2	3	4	5
28. Technical trainings					
29. Other, please specify _____	1	2	3	4	5

English Reading Skills used in the company

	0-20%	21-40%	41-60%	61-80%	81-100%
30. Reading manuals, instructions	1	2	3	4	5
31. Reading reports	1	2	3	4	5
32. Other, please specify _____	1	2	3	4	5