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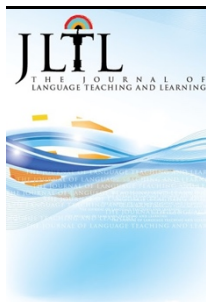
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A Needs Analysis of Language Barriers in Türkiye Earthquake: Emergency English from Evidence-Based Approach

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ABSTRACT

Effective communication becomes a critical component of survival and rescue operations in disasters. Earthquakes, particularly, strike with little warning, leaving affected populations in urgent need of clear and concise information and aid to ensure their safety. A fundamental grasp of "emergency English" can prove invaluable for non-English-speaking communities or those in multilingual environments. This case study investigates the language barriers of earthquake victims during the Kahramanmaraş Earthquake on February 6, 2023, in Türkiye. Data were collected from three groups: interpreters, international search and rescue teams, and English language teachers working in the earthquake area to determine the language barriers. A needs analysis study was conducted using semi-structured interview questions drawn from an evidence-based approach. Interpreters offered insights into their experiences and challenges in receiving crucial information, while rescue teams provided perspectives on communication obstacles during response efforts. English language teachers also contributed their expertise in identifying the gaps in language preparedness and the potential for improving emergency English training in such scenarios. Results from the three groups showed that language components such as vocabulary items on health, earthquake terminology, and functions of giving directions, describing places, and reporting statements were the most needed language components to overcome the barriers in spoken communication in the crisis area. As a solution, the participants expressed the necessity of developing an emergency English language teaching programme for K-12 education nationwide. The paper concludes with suggestions for stakeholders and implications for future research.

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Tavil Z. M., Güngör, M. N., Taşpınar M., Şahin, M. G., Uluylol, Ç., Fişne, F. N., Akalın, M. B., & Erdiñç-Akan, O. (2025). A Needs Analysis of Language Barriers in Türkiye Earthquake: Emergency English from Evidence-Based Approach. *The Journal of Language Teaching and Learning*, 15(2), 201-222.

In disaster situations, communication is one of the most essential tools for ensuring effective response and coordination (Uekusa, 2019). Earthquakes, often sudden and unpredictable, present unique challenges that require rapid, clear, and effective communication between victims, emergency responders, and rescue organisations. In such critical moments, language barriers can significantly impede the exchange of vital information, delaying rescue efforts and exacerbating the crisis. Given the global nature of aid responses, English often serves as the common lingua franca (Bayyurt, 2018), particularly in countries with diverse linguistic populations or where international search and rescue teams are involved.

Emergency English refers to the essential vocabulary, phrases, and communicative strategies necessary to communicate with national and international people during a crisis. Emergency English is pivotal in mitigating the chaos and confusion that often accompanies natural disasters like earthquakes by facilitating clear interaction between victims, first responders, and international aid and rescue workers. This form of communication typically includes instructions on safety measures, requests for medical assistance, and coordination directives among rescue teams (Uekusa, 2019). In earthquake scenarios, where every second counts, mastering critical elements of emergency English can be the difference between life and death for non-native speakers (Marlowe & Bogen, 2015). It facilitates the dissemination of urgent messages and instructions, enabling people to respond appropriately to aftershocks, evacuations, and other critical developments.

While the general principles of emergency English are crucial, its application during earthquakes presents specific linguistic, social, and cultural challenges (Duncan, 2013). Non-native speakers of English, in this case, local victims in the cities where the February 6, 2023 earthquake hit, were vulnerable because of their inability and insufficient linguistic competence to communicate in English (Teo et al., 2019). Around 11,488 international search and rescue personnel from 90 countries came to Türkiye to help during the February 6 Earthquake (Anadolu Agency, 2024).

The Turkish State assigned interpreters to help these victims overcome the communication barriers with these international search and rescue teams. These interpreters consisted of volunteers who knew English, who were working as language teachers at the time of the quake in the region, and/or who worked as professional interpreters in various organizations such as Translation and Interpretation Association in Türkiye (ARÇ). However, it is uncertain whether and to what extent this solution was helpful in such an emergency. Therefore, this study aimed to investigate the language barriers experienced in the February 6, 2023 earthquake through a needs analysis study, which will shed light on communication problems that may arise in future disasters. Accordingly, the research questions that guided the study were:

1. What are the language barriers the earthquake victims experienced from the perspectives of international search and rescue teams?
2. What are the language barriers the earthquake victims experienced from the perspectives of interpreters?
3. What are the language barriers the earthquake victims experienced from the perspectives of English language teachers?

2. Literature Review

2.1. Theoretical framework

In needs-analysis studies, the evidence-based approach ensures that decisions and interventions are grounded in reliable and objective data rather than assumptions or anecdotal evidence. This approach helps identify actual needs, priorities, and gaps by systematically gathering and analysing data, providing a solid basis for informed decision-making (Steglitz et al., 2015). It also enhances the credibility and effectiveness of the study outcomes, ensuring that solutions are relevant to the real context and specific needs of the target groups.

2.2. *The evidence-based approach*

Evidence encompasses various knowledge sources, including professional expertise, judgement, empirical data, and research (Nelson & Campbell, 2017). Although the definition of evidence has been debated in the literature, this article defines evidence as the outcome of systematic investigation aimed at expanding knowledge (Davies et al., 2000). The evidence-based approach (EBA) is defined as “an effort to improve decision-making in applied settings by explicitly articulating the central role of evidence in these decisions and thereby improving outcomes” (Slocum, 2014, p. 42). The evidence-based approach seeks to refine the process of obtaining and translating high-quality scientific research into effective practical decisions (Steglitz et al., 2015). This viewpoint highlights the pivotal role of research-based evidence in making decisions and advancing the intended results. It identifies perceived needs, addresses real-world problems, and provides evidence that frames these needs as researchable questions (Davies, 1999; Sebba, 2004).

The evidence-based approach uses research-driven outcomes in developing field-related policies. Steglitz et al. (2015) specify that the evidence might be obtained “from the systematic collection of data through observation and experiment, as well as the formulation of questions and testing of hypotheses” (p. 332). Accordingly, valid and reliable data collection and analysis are the core of gathering useful evidence. Like other health, economics, and business disciplines, it is also commonly applied in educational decision-making. For example, Efendiođlu and Yelken (2009, p. 119) presented a diagram of how the principles of the evidence-based approach in developing the instructional principles interacted. Specifically, these steps are as follows: (a) research studies, (b) reviewing the research findings systematically, (c) development of evidence-based educational principles, (d) implementation of an educational programme, (e) adaptation of the principles and implementation in practice, (f) assessment of the principles, and (g) feedback and revision. Within the framework of this educational evidence-based

approach, analysis of the needs is the method that provides research-based evidence to stakeholders so they can evaluate the current needs and make new policies, including teaching materials or programs.

Notably, this approach has been utilised in education to identify and provide strong evidence of what works in educational programmes (Connolly et al., 2018; Cordingley, 2004). Knapper (2010) argued that teaching must be grounded in sound empirical evidence regarding the methods and approaches that lead to specific learning outcomes. The approach draws on educational research and data to generate knowledge that enhances learner outcomes (Nelson & Campbell, 2017). Thus, it is a tool for enhancing teaching and learning by using evidence to improve practice (Cordingley, 2004). It also includes interventions, programmes, or curricula that address identified academic or behavioural needs (Spencer et al., 2012). This helps close the gap between theory and practice, attain desired standards, and improve educational outcomes (Cook et al., 2012).

In the case of the February 6, 2023 earthquake, language barriers prevented many victims from expressing their needs. Since EBA involves identifying perceived needs and addressing real-world problems (Cook et al., 2012; Sebba, 2004), it plays a crucial role in determining the language barriers examined in this study, particularly those faced by interpreters, international search and rescue teams, and English language teachers. Rescue teams and interpreters participating in this study as the study samples worked in the earthquake region for a long time. As the third group of participants, language teachers working as English teachers in the earthquake region before, during, and/or after the disaster served the first responders in the disaster term. These teachers were engaged in the disaster term, either by working voluntarily as the interpreters or teaching English in the region. We investigated the language barriers between these first responders and the earthquake victims, making the study unique in terms of its sampling, relevance, and originality of the findings. This also enabled us to hear communication problems, as evidenced by real disaster stories, and

drive common language barriers experienced during the disaster. As Nelson and Campbell (2017) noted, evidence drawn from practice often plays a more prominent role than original research studies in driving practical solutions. Investigating the specific language barriers faced by practitioners in the current study will provide evidence-based insights into the requirements for Emergency English to bridge communication gaps and improve response efforts in future disaster situations.

2.3. Previous Studies on Disaster-term Language Barriers

Although studies on language barriers in earthquake disasters are scarce (Uekusa, 2019), the literature mainly focused on language barriers resulting from various factors such as gender, linguistic and cultural diversity, and immigration. Watkins et al. (2012) examined factors influencing English language education, participation, and achievement among Karen refugee women in Australia. They discussed women were disadvantaged by pre-immigration education as well as post-immigration socio-economic factors, including unequal opportunities for social, vocational, and educational participation. In their study, it was found that these women suffered from English language and communication barriers, which impacted their feelings of stress and helplessness. They also argued that Karen women's access to the language education provided by the Australian Government is often limited by social, gendered, and cultural factors that deeply intermixed pre-immigration factors with post-immigration contexts. Hence, there was a call for an in-depth exploration of language barriers for disadvantaged groups and for teaching guidelines to be developed to address these needs.

Similarly, Penuel and Statler (2011) examined the language barriers faced by individuals with limited English proficiency (LEP) in the USA during and after earthquakes. They argued that LEP communities are unprepared for disasters because of minimal exposure to language-appropriate disaster education materials and training opportunities. Furthermore, language barriers often

inhibited LEP communities from receiving pre-disaster warnings and evacuation orders, not allowing them to take protective action. LEP communities are also beset by several challenges across the phases of response and recovery, as they face communication barriers with first responders and are often unaware of, or unable to obtain, post-disaster recovery aid due to information being disseminated in English alone. They investigated communication barriers between first responders such as police, firefighters, emergency medical technicians, and counsellors—and LEP individuals. The limited language capabilities of emergency telephone service operators adversely affected addressing the needs of LEP disaster victims. In the natural disasters in the USA, such as Hurricane Katrina, many LEP immigrants were denied aid as they did not speak English. Penuel and Statler (2011) also reported that while medical interpreters possessed the skills necessary to bridge communication gaps between LEP individuals and first responders following a disaster, the fiscal constraints of emergency response agencies often limited the extent to which this strategy was embraced. In other words, although medical interpreters were capable of helping non-English speakers communicate with emergency personnel during disasters, budget limitations often prevented agencies from fully using their services. They suggested language issues surrounding international rescue workers can be best resolved when service providers are familiar with the cultural and linguistic intricacies of the affected population and forge community partnerships.

Uekusa (2019) introduced the concept of disaster linguicism with linguistic minorities' disaster experiences. He took our attention to the significant misconception that disaster linguicism suddenly emerges during disasters. He argued that we must explore linguistic minorities' everyday practices and protect them in disasters more innovatively than simply providing information in multilingual formats. For future research, he advocates greater inclusivity, bottom-up approaches, and practical theories, referring to critical, functional, and realistic policy insights for disaster language planning and programme development.

In addition, Teo et al. (2019), in their exploratory case study in Australia, investigated how an individual's ethnicity and language skills influenced their levels of disaster preparedness. Their study noted that a combination of factors such as age, gender, ethnicity, language, and social exclusion can make some individuals and groups in society more vulnerable than others in a disaster situation. For example, people from some ethnic backgrounds may have weak or limited social networks or connections to the broader community beyond family or ethnic groups, resulting in ignorance or confusion about how to best prepare for and respond to disasters. These factors make them less prepared for and more vulnerable to a disaster than local citizens. Further, demographic factors such as age, gender, employment, and past disaster experience were also acknowledged, influencing the risk perceptions of people from different ethnic and language backgrounds. Their findings revealed several aspects: a) disaster preparedness differed significantly in the case study location based on ethnicity and language differences, b) the language skill of participants was found to influence their preparedness and self-reported ability to face similar situations, and c) mass media such as FM radio channels and Television, as well as family members' calling/texting on a mobile phone, friends' calling/texting, and Bureau of Meteorology (BOM) website, were the primary sources that ethnic groups used to obtain the most up-to-date disaster information.

All in all, these studies have pointed to a common fact that language barriers may create social vulnerability. The conventional solutions, such as disseminating disaster information in multilingual formats or using bi-/multilingual interpreters and (automated) translators, may need to be revised to help the community function before-, during, and post-disaster periods. Therefore, a more sound, practical, and macro-policy approach has been investigated. We aim to address this international need and call to determine the language barriers the local people faced in their communication with the international search and rescue teams, interpreters, and English

language teachers in the February 6, 2023 earthquake in Türkiye.

3. Methodology

3.1. Research Design

This research employs a qualitative case study design. A case study is a detailed examination of one or more individuals or social structures. These studies focus on emerging activities and processes (Fraenkel, & Wallen, 2006). In a case study, data is obtained from multiple sources (interviews, focus group discussions, documents, etc.) regarding one or more cases (Creswell, 2014). Accordingly, this study analyses emergency language needs based on three cases: international search and rescue teams, interpreters, and language teachers. First, field-related documents were examined in the needs analysis section of the research. Then, focus-group interviews were conducted with the participants in each case.

3.2. Research Context

The study was conducted within the TÜBİTAK 1001 project "Development and Implementation of the Emergency English Language Proficiency Teaching Programme for Primary School 4th-Grade Students". The interview forms were prepared first, and then interviews were scheduled via Zoom. Participants consented to video recordings, and information about how the data would be used was provided to them. The interviews were held between January and April 2024, nearly one year after the February 2023 Earthquake in Türkiye. Group interviews were held with 2-4 people participating. Accordingly, nine focus group interviews were conducted in the international search and rescue teams group, thirteen in the interpreters group, and fifteen in the language teachers group. After the video recordings, the interviews were transcribed and analysed through MAXQDA software. Member checking was obtained from the participants to increase validity during the interview. Each interview lasted approximately 1-2 hours, taking into account the recommendations in the literature

(Yıldırım & Şimşek, 2016), and all interviews were completed within two months. Interviews were conducted in English with rescue teams and in Turkish with the interpreters and teachers group.

3.3. Participants

In the study, three focus group samples, each consisting of 30 people, were formed: search and rescue teams from abroad, translators of these teams, and primary school 4th-grade English teachers teaching in earthquake-affected regions. Criterion sampling was used to select the individuals in the groups, as the members were expected to have similar earthquake experiences. The participants in the international search and rescue teams, one of the study groups of the

research, were from 9 different countries (the USA, Bulgaria, Italy, Lithuania, Spain, Greece, Azerbaijan, Romania, and the Czech Republic). Their ages ranged between 26 and 61 ($\bar{x}=40$), with an average working experience (seniority) of 9.8 years and an average working time in the earthquake zone of 6.2 days. The ages of the participants in the interpreter group ranged between 19 and 70 ($\bar{x}=29.2$), and the average duration of working in the earthquake zone was 31.6 days. The 4th grade English teachers' ages ranged between 25 and 48 ($\bar{x}=33$), and their average professional seniority was 9.2 years. Triangulation was ensured by integrating the perspectives of first responders: rescue teams, interpreters, and language teachers, thereby enhancing the validity and depth of the analysis.

Table 1
Demographic Characteristics of Participants

Study Group	Characteristics	Category	f	%
Rescue Teams	Gender	Female	10	33.3
		Male	20	66.6
	Collaborating Organization	AFAD	8	88.8
		AFET (NGO)	1	11.1
Interpreters	Gender	Female	20	66.6
		Male	10	33.3
	Organization Worked For	Aid Organizations/NGOs of Different Countries	22	64.7
		Local Relief Foundations	7	20.6
		Ministry of the Interior	3	8.8
		AFAD	2	5.9
	Field of Work	Health	14	32.6
		Coordination	13	30.2
		Search and Rescue	8	18.6
		Media	3	7
Nutrition		3	7	
Logistics		2	4.7	
4th Grade English Teachers	Gender	Female	25	83
		Male	5	17
	Place of Work	Kahramanmaraş	8	26
		Gaziantep	5	17
		Hatay	5	17
		Diyarbakır	4	13
		Osmaniye	3	10
		Malatya	3	10
		Adana	2	7

According to Table 1, most of the rescue team study group consisted of men. Most of the participants stated that they worked in cooperation with AFAD. Most of the interpreter study group is comprised of women, and more than half of them indicated that they worked in the earthquake zone in cooperation with aid organisations/NGOs from different countries. The majority of the English language teachers group is also female, and the participants work in seven different earthquake-affected provinces, most notably Kahramanmaraş, Gaziantep, and Hatay.

3.4. Data Collection Tools and Procedure

Within the scope of the research, three different forms were developed for the sample groups: “Foreign Search and Rescue Team Focus Group Interview Form”, “Interpreter Focus Group Interview Form”, and “English Language Teachers Focus Group Interview Form”. Focus group interview forms consist of demographic information and semi-structured questions. Each form includes similar questions that serve the same purpose and also contains questions specific to the field of the study group. The process used to develop all three forms is as follows: The forms were revised using literature and expert opinion from six different fields (English language teaching, psychological counselling and guidance, measurement and evaluation, education and technology, program development, and earthquake subject matter). To test the applicability of each form, a pilot study was conducted in a group of 6-8 people following the number of individuals in the group to be applied. Questions that served the same purpose and were considered repetitive were examined. Accordingly, some questions were removed from the interview form. In addition, questions that were not sufficiently clear were reworded by the researchers and the focus group interview forms were finalised and implemented. The rescue team interview form includes demographic information questions (gender, age, country, length of service as a search and rescue worker (seniority), and length of service in the earthquake zone) and seven semi-structured

questions. The interview form for the interpreter group included demographic information questions (gender, age, length of time worked in the earthquake zone, and the organisation cooperated with to provide services in the earthquake zone) and seven semi-structured questions. Lastly, the interview form for English teachers included demographic information questions (professional experience, city, field of graduation, school level, and cooperation during disaster) and six semi-structured questions. The interview questions are presented in the appendix.

3.5. Data Analysis

The data were analysed using the content analysis method. Content analysis is defined as “technique that enables researchers to study human behavior in an indirect way, through an analysis of their communications.” (Fraenkel, & Wallen, 2006, pp. 483). Data were analysed in MAXQDA program. Categories, codes, and sub-codes were obtained according to the analysis. Soon after commencing the content analysis, four English Language experts and two Measurement and Evaluation experts convened to discuss the appropriateness of the codes, categories, and themes. Some codes, categories, and themes were revised and corrected in line with the reviews. Accordingly, codes and subcodes with similar or identical meanings identified across all three sample groups were classified under a unified category. The researchers came to a consensus over the category names based on the codes derived from the content analysis.

3.6. Trustworthiness

Lincoln and Guba (1985) propose four basic methods of trustworthiness: credibility, confirmability, transferability, and consistency. To ensure credibility, interview questions were examined by two experts in Measurement and Evaluation and one expert in Guidance and Psychological Counselling, video-recorded and transcribed without any interventions. Subsequently, member verification was performed

to confirm the precise understanding of participants' responses.

Member checking refers to that the researcher verifies the findings derived from the participants' statements. This allows the researcher to prevent any possible misunderstandings or misinterpretations (Meriam, 2018). To ensure confirmability, a pilot study was conducted before the interviews to examine the clarity of the interview form and the appropriateness of the questions to the scope. To ensure transferability, the participants' statements were transcribed into text with comprehensive descriptions, devoid of any comments from the coders. To check for consistency, an independent researcher other than the coders reviewed some of the interview transcripts to see how well the statements matched the codes. In addition, the percentage of agreement ($\text{Reliability} = \frac{\text{Number of Agreements}}{\text{Number of Agreements} + \text{Disagreements}} \times 100$) was calculated after the analyses were completed to examine the inter-coder consensus (Miles & Huberman, 1994). The percentage of agreement was 94% for rescue teams, 90.8% for interpreters, and 96% for 4th-grade English teachers. Moreover, the codes that emerged from the analysis were categorised in line with the information in the literature.

In addition, triangulation was used to ensure reliability. Triangulation is a verification process that uses multiple data sources (Meriam, 2018, p. 206). Triangulation can be achieved by using multiple theories, researchers, or data technologies (Berg & Lune, 2016). The participation of multiple researchers in the data collection and analysis processes of the same study is also referred to as researcher triangulation (Meriam, 2018). To ensure researcher triangulation, group interviews with search and rescue teams, interpreters, and English language teachers were conducted by a total of five different researchers. Furthermore, the researchers completed their analyses separately at first, and then they discussed the codes and categories in a group setting.

4. Findings

4.1. RQ 1: *What are the language barriers the earthquake victims experienced from the perspectives of international search and rescue teams?*

Four categories were obtained in the interviews with search and rescue teams: language barriers, basic needs, resolution, and language components (Table 2).

Table 2
Search and Rescue Team Members' Experiences in the Language Barriers

Category	Code	Sub- Code	Frequency	%
Language Barriers	Communication with Others		9	47.3
	Cultural Norms		2	10.5
	Interpreters' Lack of Proficiency		3	15.7
	Inadequate Turkish Interpreters for Rescue Teams		5	26.3
		Total	19	100
Basic Needs	Safety and Security		3	23
	Physical Needs		6	46.1
	Psychological Needs		4	40.7
		Total	13	100
Resolution	Ways of Communication		5	27.7
	Use of Technology		7	38.8

Category	Code	Sub- Code	Frequency	%
	Protocols and Guidelines		3	16.6
		Total	18	100
Language Components	Vocabulary	Family Members	3	4.9
		Illness	4	6.5
		Injuries	6	9.8
		Body Parts	3	4.9
		Quake and Emergency Terms	8	13.1
		Nouns and Numbers	10	16.3
		Buildings	14	22.9
		Emergency Management	13	21.3
		Total	61	100
		Structure	Directions-Adverbs of Place	9
		Action Verbs	5	11.9
		Informative Questions	8	19
		Describing People	2	4.7
		Describing Places	8	19
		Prepositions	8	19
		Reported Speech	2	4.7
		Total	42	100

International rescue teams reported that communication with others was the most common language barrier they encountered (f=9, 47.3%).

“At the same time, they attached our team volunteer guy from Istanbul who was deployed to Adana to support these international teams from all over the World. His main responsibilities were to be our interpreter, not only an interpreter but also to facilitate our coordination with local authorities. Sometimes, it is not only the language barrier, but we need to communicate with people in English and with people familiar with the local system. Let’s say who knows where we can find appropriate support assistance, for example, fuel, food, and stuff like that, which isnot only the language barrier but also a

coordination barrier and challenge. So this is a very important point and key element: this liaison officer was not only a translator.” (P.1.2.1.)

The use of technology (f=7, 38.8%) to overcome these obstacles was the most frequently cited solution by search and rescue teams.

“One of the tools that we tried to use was uh some mobile apps like Google translator um, fortunately, these years they are developing fast and uh uh especially Google translator did a great job for us. But uh then comes the problem with the uh mobile services and the range of the operators in the affected areas, so we cannot always rely on this uh option.” (P.1.2.2.)

In another category, the basic needs and physical needs codes ranked first. An interview response is given below.

“From the first moment we landed, English was the only language we could use. Every communication with the outside factors was done in English no matter whom we spoke to: authorities, other USAR teams, citizens, UCC (USAR Coordination Cell). The purposes of using English were, from the most basic, like finding out the location of our base, general information about the earthquake, areas affected, our assigned missions, our logistical needs (transport, gas, food/ water, internet), to the more complex ones, more specific, search and rescue focused, technical, medical.” (P.1.8.3.)

In the search and rescue process, the most frequently used language components were found to be vocabulary and grammar in the corresponding category. The most frequent sub-code in the vocabulary code was buildings (f=14, %22.9), and the most frequent sub-code in the grammar code

was directions-adverbs of place (f=9, %21.4) in the language component category. The following is the statement of a rescuer for both most repeated sub-codes.

“.....if he can tell us on which floor he was, we can uh really easy uh find some way to him if he knows on which floor he was or in which part of the building because they collapse like pancakes or like uh on one side and if we know on which uh uh level he was or in which apartment and he can tell us it’s it will be extremely easy more easily to find him if we can know this information because he can be on the eight floors or the second floor and it this information is uh essential for us.” (P.1.2.3.)

4.2. R.Q.2: *What are the language barriers the earthquake victims experienced from the perspectives of interpreters?*

As a result of the analysis, the interpreters' views on the needs analysis are presented in Table 3.

Table 3
Interpreters’ Experiences in the Language Barriers

Category	Code	Sub- Code	Frequency	%
Language Barriers		Indirect Translation	11	36.7
		Terminology	11	36.7
		Pronunciation	5	16.7
		Lack of Proficiency	2	6.7
		Inadequate Turkish Interpreters for Rescue Teams	1	3.3
		Total	30	100
Solutions for Problems		Use of Technology	9	50
		Body Language	6	33.3
		Simplified Language	3	16.7
		Total	18	100
Language Components	Vocabulary	Health	42	43.3
		Earthquake Terms	11	11.3
		Building Structure	9	9.3

Category	Code	Sub- Code	Frequency	%
		Family Members	8	8.2
		Numbers	7	7.2
		Emergency Terms	6	6.2
		Basic Communication Skills	5	5.2
		Short Expressions	4	4.1
		Names	3	3.1
		Furniture	2	2.1
		Total	97	100
	Grammar	Reported Speech	11	18.3
		Prepositions	10	16.7
		Directions	10	16.7
		Informative Questions	9	15
		Tenses	8	13.3
		Imperatives	6	10
		Adjectives	3	5
		There is/are	3	5
		Total	60	100
Basic Needs	Psychological needs	Crisis Management	10	47.6
		Talking/Socializing	7	33.3
		Crisis management	4	19.1
	Physical needs	Food and Drinks	7	38.9
		Hygiene	6	33.3
		Warming	5	27.8
	Safety	Security	7	77.8
		Job security	2	22.2

As seen in Table 3, four categories emerged from the interviews with interpreters: language barriers, problem-solving, language components, and basic needs.

In the interpreters group, the most common language barriers were found to be indirect (double time) translation (f=11) and terminology (f=11). Here

is what an interpreter said about having to deal with indirect translation:

"I had such a problem. For example, one of our patients did not speak Turkish. She spoke Arabic. Her daughter-in-law was there to translate for her... I could not verify what the woman told me was true and

how much was false because I did not speak Arabic. The woman's Turkish was just as broken. I had such problems. " (P.2.3.2.)

The most recurrent code in interpreters' suggestions for overcoming language barriers was using technology (f=9). One interpreter emphasised that he was able to learn the meaning of unfamiliar words using technology.

"There were some words I did not know. I had to use Google Translate the first day and the following days." (P.2.9.2.)

The language components most frequently used by interpreters are divided into two codes: vocabulary and grammar. The most recurrent sub-code in the vocabulary code was health (f=42). The following is the statement of an interpreter who indicated that she used health-related vocabulary.

"Whatever she needs to say in a very urgent way... It hurts here. It is bleeding here." (P.2.11.2)

The following are the views of a translator who emphasises basic communication skills in the context of the words used.

"There is a serious incident. It has psychological effects. Children already have difficulty expressing themselves in their language. Expressing this to someone who comes from abroad, looks very different to the child, and speaks a different language will remove the psychological impact on the child to a great extent. I have witnessed this many times. I saw 10-15 children in the tent city trying to express themselves by saying "Hello" and "How are you?" when the American teams were around us. Even this provides a great advantage." (P.2.1.3.)

In the grammar code, the most recurrent subcodes were reported speech (f=11), prepositions (f=10), directions (f=10), and informative questions (f=9). Below is the statement of an interpreter who stated that he/she frequently used informative questions.

"Is s/he in any trouble? Does s/he have a disease, etc.? I had to ask these at the wreckage."

Below is what an interpreter says about using imperatives.

"It's also commands. Typical commands like "Breathe slowly" or "Raise your arms" if they are under the rubble..." (P.2.11.3.)

Below, a participant emphasises that interpreters need to improve themselves in crisis management.

"My suggestion is that when the translators and foreign teams arrive, the translators should explain the work being done, that is, the working methods of the foreigners, to the public. Because the uncertainty there makes people a bit nervous and this can hinder the work." (K.2.2.1.)

4.3. R.Q.3. *What are the language barriers the earthquake victims experienced from the perspectives of the English language teachers?*

In line with the opinions of English language teachers, language barriers, potential solutions to these problems, and emergency English language needs and their pedagogical implication results are presented in Table 4.

Table 4
English Language Teachers' Experiences in Language Barriers

Category	Code	Sub- Code	Frequency	%
Language Barriers	Terminology	Technical Terms	2	50
	Lack of Language Proficiency	English Language Proficiency	2	50
		Total	4	100

Category	Code	Sub- Code	Frequency	%	
Solutions for Problems	Real-life Practice		1	20	
		Simplified Language	1	20	
		Change in Teaching Paradigms	2	40	
		Awareness Raising	1	20	
		Total	5	100	
Language Components	Vocabulary	Health	5	12,2	
		Terminology	7	17,08	
		Buildings	1	2,44	
		Feelings	4	9,76	
		Furniture	2	4,88	
		Nouns	5	12,2	
		Numbers	4	9,76	
		Location	2	4,88	
		Weather	2	4,88	
		Short Phrases/Expressions	2	4,88	
		Family Members	3	7,32	
		Basic Communication Skills	1	2,44	
		Adjectives	2	4,88	
		Adverbs	1	2,44	
		Grammar	There is/are*	2	8,68
			Prepositions	1	4,34
			Reported Speech	1	4,34
			Informative Questions*	8	34,72
			Tenses	1	4,34
			Imperatives	4	17,36
			Possessions	1	4,34
			Modals	3	13,02
			Pronunciation	World Englishes	1
Spelling	1			4,34	
	Total	64	100		
Language Skills	Speaking*	4	26,64		

Category	Code	Sub- Code	Frequency	%
	Listening*		4	26,64
	Writing		2	13,32
	Reading		3	19,8
	Integrated Skills		2	13,32
		Total	15	100
Pedagogical Aspects	Ways of instruction		4	17,36
	Content-based Scenarios		2	8,68
	Teaching Materials		4	17,36
	Type of Activities		9	39,06
	Language Assessment		2	8,68
	Values Education		2	8,68
	Total	23	100	
Basic Needs	Psychological Needs	Crisis Management	1	16,7
		Emotion Regulation	1	16,7
	Physical Needs	Food and Drinks	3	49,9
		Hygiene	1	16,7
		Total	6	100

Table 4 presents six main categories and 24 codes that emerged from English language teachers' interview responses. As language barriers, English teachers highlight the lack of technical terminology (f=2) and inadequate English proficiency (f=2).

"There is inadequate use of [English] language. They (rescue teams) were also very good at technology. They said there was a lack of language (proficiency)." (P.3.1.1)

"They especially had difficulties with their language skills and structure. You know, since there are not many frequently used phrases, they are not in the textbooks anyway." (P.3.5.1)

As for the solutions to these problems, EFL teachers suggest real-life practice of target language, simple terminology, a shift in teaching paradigm (f=2), and raising awareness on Emergency English. Some interview responses are given below:

"I think the opportunity to use the language actively and use it in their social lives will prevent them from panicking." (P.3.5.2)

"It wasn't much of a problem actually because, in general, everyone tries to use the simplest language in such situations." (P.3.12.1)

Considering the emergency language needs during an earthquake, EFL teachers suggest the pivotal use of basic vocabulary, grammar, pronunciation, and spelling, along with practising four language skills. Health (f=5) and terminology (f=7) are the main codes with higher frequency in which the use of vocabulary should be contextualised. To illustrate, some interview responses are provided below:

"They can tell where it hurts or ask, 'I can't feel my arm or leg. Where am I now?'" (P.3.12.1)

“Their health condition [is important], [For example] ‘Is there any stuck body part?’... because we also call the UMKE teams at that moment... UMKE is the health team. We call them, too. They are also waiting with us. ‘Are you stuck anywhere?’ We ask [such] questions” (P.3.4.1)

Similar to the use of vocabulary, some grammatical functions could be essential for emergency cases. Informative Questions (f=8), Imperatives (f=4), and Modals (f=3) are the codes that EFL teachers emphasised most. Their responses are exemplified below:

“You know, in the first place, ‘Can you hear me?’ question is used. Apart from that, the other questions are: How are you feeling? How many are you? Is there anyone with you? If you have a sibling, can you reach him?”(P.3.12.1).

“I think it is vital that they understand the instructions we will give. ‘Don’t move’, ‘Close your eyes’ because the machines might be working. At that time, it could just be dust and soil.” (P.3.4.1)

When the interview responses from each subject group are analysed and compared, it is seen that the category of “Pedagogical Aspects” is only peculiar to the findings obtained from EFL teachers because some interview prompts were about integrating emergency English into the language program. In other words, EFL teachers elaborated on how to teach emergency English in their classes. More specifically, teachers emphasise the values education (f=2) regarding respect for others’ needs. Also, they suggest various teaching methods and tasks (f=9) to implement Emergency English programmes at schools:

“For example, MoNE [the relevant department in MoNE designing instructional materials] prepares a video itself at that moment. There may be a dialogue. We can show it in the classroom and do something similar in the classroom. Or it’s ‘listening’, and they fill it in themselves. Then we can give the answers. You know, “What do you think can be said in this situation?” Then the main track can be played.” (P.3.7.3)

“Animation, especially for primary and secondary school students, is visually more effective than usual. At least, it’s permanent for their visual memories.” (P.3.12.1)

“Computer games are also very popular among children. Since they already learn most of the words in English from games, I think children can be taught this way.” (P.3.5.1)

Finally, English language teachers discuss the importance of teaching language learners the phrases concerning the basic needs during an emergency. These needs could be categorised as psychological needs and physical needs. For the former, crisis management skills (f=1) and emotional regulation (f=1) can be improved among the learners. The latter is about the expression of needs related to food, drinks (f=3), and hygiene (f=1).

“This is a crisis, but how do we move on from a crisis? What is the most logical way for us to continue our path.” (P.3.8.1)

“Water may also be needed.... It might be the most basic food names.” (P.3.2.3)

“It can be cleaning materials, hygiene materials; food is very important, drinking water is incredibly important, a place to stay, for example, ‘shelter’, I think it is necessary to teach such basic needs as ‘water’. (P.3.3.2)

5. Discussion and Conclusion

This study presented the language barriers the local people faced in communicating with the international search and rescue teams, interpreters, and English language teachers in the February 6, 2023 earthquake in Türkiye. It followed needs analysis stages based on an evidence-based approach to discover the specific language problems these teams, interpreters, and teachers experienced in their emergency contact with local people in the earthquake region. The international search and rescue team faced problems mainly with language components, such as explaining and understanding language at the vocabulary level. Words about nouns, numbers, buildings, and

emergency management became the most needed language during the crisis. Also, language functions such as describing places through adjectives and giving directions through prepositions were the most needed language structure items. These teams stated the role of language barriers in their communication with others and the inadequate number of Turkish interpreters for rescue teams. Although they used technology such as Google Translator, this did not provide a safe and reliable solution. Hence, it is determined that there is a clear need for an emergency English teaching programme to be used in mainstream schools at the K-12 level to educate the new generation in unprecedented situations.

Similar to the barriers rescue teams experienced, interpreters also experienced the most vocabulary problems. However, different from these teams, they had difficulties in interpreting the words about health and earthquake terms between the teams and the local people. Since they reported words and sentences between these groups by translating the target language into the native language or vice versa, they stated that they had language structure problems with reported speech use, prepositions, and directions to explain the places of objects in the crisis time. As for the language barriers, they had difficulties in indirect translation and using earthquake terminology in interpreting. They also used technology to solve interpretation problems, although they did not find it quite effective. Given the similar problems and needs, they also highlighted the necessity of developing an emergency English teaching programme to educate all citizens against such unprecedented natural disasters.

As for English language teachers, the most reported problems were related to using earthquake vocabulary items such as terminology, health, and nouns and asking informative questions. Unlike the other groups, teachers suggested pedagogical solutions for overcoming communication problems resulting from language barriers in the earthquake term. They advocated the integration of a wide range of teaching activities with content-based scenarios and values education, proposing the necessity of a language teaching programme for

emergencies structured on enriched materials use and diversified instruction. Since they mostly used speaking and listening skills in the earthquake area, they emphasised the need to use the proposed programme, starting with the 4th-grade students in Türkiye. Accordingly, they believed children could be educated from their childhood, contributing to the language awareness of the future generation.

The needs analysis of international search and rescue teams, interpreters, and English language teachers reveals several common themes that emphasise the role of Emergency English in overcoming language barriers and communication challenges. All groups identified the significance of terminology, lack of proficiency, and basic language components like vocabulary and grammar (e.g., nouns, numbers, and basic expressions) as critical areas requiring attention. Furthermore, shared needs for effective communication strategies such as prepositions, informative questions, and imperatives emerged prominently. The necessity of integrating emotional and crisis management was another recurring theme, highlighting the cross-disciplinary demand for preparedness in disaster scenarios. Despite differences in their specific tasks, the reliance on tools like compensation strategies, body language, and explicit teaching underlines their collective effort to overcome communication challenges in diverse and multilingual contexts.

On the other hand, the comparison of emerging themes across international search and rescue teams, interpreters, and English language teachers demonstrates both shared priorities and unique solutions tailored to their roles. A key similarity lies in their mutual emphasis on addressing language barriers, with all groups highlighting terminology, basic communication skills, and critical vocabulary categories such as emergency terms and health-related words. Additionally, emotional and crisis management are universally recognised as essential for effective performance in high-pressure situations. However, distinctions emerge in the approaches of each group to address these challenges. For instance, English language teachers focus more on language skills like speaking, listening, and integrated instruction, employing methods such as role-play and gamification.

Meanwhile, interpreters and rescue teams prioritise immediate, pragmatic solutions like the use of technology, body language, and protocols to navigate urgent scenarios. These differences underscore the tailored strategies required for each group's specific contexts, even as they converge on the overarching need for clear and efficient communication. Given the study's distinctive sampling, research context, and findings, it does not directly compare its results with prior studies; however, it provides valuable insights for future research on language barriers in disaster terms.

Finally, the earthquake occurred in both the city centres and the rural areas of the eleven cities (Kahramanmaraş, Adıyaman, Malatya, Diyarbakır, Gaziantep, Elazığ, Hatay, Kilis, Adana, Osmaniye, and Şanlıurfa), such as towns and villages. As indicated in Watkins et al.'s (2012) study, our results demonstrate that socioeconomic factors, such as unequal opportunities for social and educational participation of the local people in English language education, created injustice factors, leading to social vulnerability in access to survival opportunities. The local people's cultural and social diversity increased linguistic challenges among rescue teams, interpreters, and language teachers in earthquake communication. Local people in these cities were minimally exposed to appropriate language disaster education materials and training opportunities, so they had difficulty in taking protective actions during the search and rescue period. We recognise the importance of increasing familiarity of the language teachers, rescue teams, and interpreters familiarity with the cultural and linguistic intricacies of the affected population in the earthquake. For this reason, as suggested by Uekusa (2019), in designing a specific emergency English programme for disasters, a bottom-up and inclusive approach should be used, considering the local populations' everyday practices.

To conclude, this study identified specific language needs, highlighting language learning outcomes through an evidence-based approach (Connolly, et al., 2018). The results of the study presented research-based evidence in determining these barriers and needs, enabling us to address real-world problems in real situations (Steglitz et al.,

2015). Based on the steps offered by Efendioğlu and Yelken (2009), the next step should be to develop and implement an educational programme with enriched real-world scenarios and teaching materials, assess the learning objectives, and design a feedback process.

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Appendix

The interview questions

SEARCH and RESCUE TEAMS INTERVIEW QUESTIONS

1. Whom did you collaborate with to communicate with quake victims in the quake term? What quake terms did you use while collaborating with the interpreter to communicate with the victims?
2. Did you collaborate with individuals who know/don't know English? If yes, how did you collaborate? What language skills and phrases did you use?
3. When you arrived in the quake region, did you have to use English? If yes, in which situations and for what purposes did you have to use English? What phrases did you use mostly?
4. Did you encounter any problems because of the language problem? If yes, what were they?
5. How did you resolve them?
6. Is there any other thing you would like to state about language proficiency and use in the disaster period?

INTERPRETERS INTERVIEW QUESTIONS

1. How did you establish communication between individuals in need of help and foreign search and rescue teams in those days?
2. What type of work did you conduct with international teams during the quake term?
3. Did you encounter any problems because of the language problem? If yes, what were they?
4. How did you resolve them?
5. Which language structures and words were frequently used during this period? During the quake term, did you encounter any children? If yes, which language structures and vocabulary did you use most often when communicating with them?
6. Which language skills were needed more in this period?
7. Is there any other thing you would like to state about language proficiency and use in the disaster period?

LANGUAGE TEACHERS INTERVIEW QUESTIONS

- 1) Did you witness the use of foreign language/English for any purpose in the disaster area? If your answer is yes:
 - a. In which situations it was used?
 - b. Which language skills, structures and vocabulary types were needed?
- 2) Did you collaborate with foreign search and rescue teams in the disaster area?
 - a. If so, could you tell us about this collaboration?
 - b. What kind of collaboration was involved?
 - c. What was your role in the collaboration?
 - d. Did you experience language problems during this collaboration? If so, what were they? Did you find solutions to these problems? How did you?
- 3) Did any of your students collaborate with foreign search and rescue teams in the disaster area?
 - a. If so, could you provide information about this collaboration??
 - b. Did your students experience language problems during this collaboration? If so, what were they? Were these problems solved? How?
- 4) Considering your experience, what are the foreign language requirements felt in the disaster area?
 - a. What types of language skills are emphasized?
 - b. What foreign language structures or expressions should be taught to students?
 - c. What are the themes or scenarios that could be presented for these structures or contents?
 - d. What methods, techniques or tools can be used to help students acquire these requirements?
 - e. Do you think these requirements should be presented to students explicitly or implicitly?
- 5) Following the disaster, did you you incorporate the previously mentioned foreign language requirements into your classes or do you intend to?
 - a. If you intend to incorporate, what are the themes or scenarios in which you could transfer this content?
 - b. What foreign language structures or expressions should be taught to students?
 - c. What are the themes that can be presented for these structures or contents?
- 6) Is there any other thing you would like to state about language proficiency and use in the disaster period??