# INTERCULTURAL USABILITY IN E-LEARNING OBJECTS PREPARED FOR TEACHING TURKISH TO FOREIGNERS

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## ABSTRACT

This research investigates the intercultural usability factor of e-learning products designed for the instruction of Turkish as a foreign language. The subject of study, "Ana Dil Turkce," refers to a freely accessible and distant education platform developed by Anadolu University with the purpose of instructing non-native speakers in the Turkish language. This study employed a concurrent mixed methods research design to investigate the intercultural usability of the "Ana Dil Turkce" e-learning system. The study incorporated a qualitative component through the utilization of a case study methodology, while a cross-sectional survey design was employed to address the quantitative part. The quantitative portion of the study employed descriptive methods, whereas the qualitative portion utilized content analysis methods. The qualitative component of the study involved the participation of 25 individuals who were active and registered users in the system during the period from 2020 to 2022. Additionally, the quantitative component of the study included the participation of 211 users. The quantitative portion of the study employed a questionnaire as a method of data collection, while the qualitative component utilized a semi-structured interview format. The study's conclusions were analyzed through the integration and juxtaposition of qualitative and quantitative data. The study yielded findings regarding the cultural appropriateness of the Ana Dil Turkce e-learning objects. The findings indicate that the cultural learning objects inside the e-learning system are deemed adequate, albeit requiring further development and enrichment.

**Keywords:** Teaching Turkish as a foreign language, intercultural usability, e-learning, e-learning objects.

## INTRODUCTION

E-learning presents certain advantages that are particularly well-suited for foreign language teaching, mostly due to its technological capabilities. These capabilities facilitate autonomous learning and have the ability to significantly enhance an individual's motivation to learn (Son, 2010). According to Nokelainen (2006) and Hadjerrouit (2010), e-learning products designed for foreign/second language instruction demonstrate efficacy, user-friendliness, memorability, enjoyment, originality, and incorporate educational and cultural

components. E-learning objects encompass more than mere content that is posted and concluded within the e-learning environment. Learning objects refer to interactive tools that are accessible on the internet and are designed to facilitate the acquisition of particular concepts by enhancing, reinforcing, or directing students' cognitive processes (Kay & Knaack, 2009). According to Litteljohn (2003), McGee (2006), and Keller (2008), it is imperative for these elements to possess the qualities of customizability, adaptability, updatability, trackability, and measurability. To assess the usability of the generated material, tools, and e-learning environments, it is essential to analyze these systems from pedagogical, cultural, and technical perspectives (Jeng, 2005).

The study context of "Ana Dil Turkce" pertains to a freely accessible platform that encompasses e-learning resources specifically designed for the instruction of Turkish as a second language. The Turkish language is known as "Ana Dil Turkce" in academic discourse. The Turkish Certificate Program, initiated in 2006, was formulated as part of the "tsp.anadolu.edu.tr" initiative of Anadolu University. The system has been operational since the year 2018. The language resource "Ana Dil Turkce" encompasses content categorized into proficiency levels A1, A2, B1, B2, C1, and C2, accompanied by a user guide. Additionally, it provides assistance for English, Arabic, and Russian languages, and offers many features including multimedia content. The Turkish language e-learning environment, known as Ana Dil Turkce, encompasses various modules including user-system interaction, learning, assistance, assessment, and evaluation. The platform provided a variety of learning materials, including e-courses, video lessons, games, and audio files, to facilitate the acquisition of proverbs, idioms, grammatical rules, and phrases. These learning contents were organized thematically, allowing for a comprehensive understanding of the many linguistic elements.

The assessment of current e-learning systems within the framework of pedagogical, technological, and intercultural usability, along with the identification of relevant criteria, can facilitate the development of future e-learning settings. This research focuses on the intercultural usability dimension, which is a crucial evaluation criterion for e-learning objects, employing a user-centered approach. The objective of this study is to ascertain the cultural attributes of e-learning materials developed for the purpose of instructing Turkish as a second language. This study represents the initial and sole investigation of the "Ana Dil Turkce" e-learning system developed by Anadolu University, focusing specifically on its intercultural usability. This study included a comprehensive questionnaire that encompassed pedagogic, technical, and multicultural aspects of usability. The primary inquiry of this investigation is as follows: "What are the perspectives of learners utilizing e-learning objects in the Ana-Dil Turkce with regards to Turkish culture and cultural interaction within the framework of intercultural usability?" This setting will first explore the concepts of usability and cross-cultural usability in the realm of e-learning items.

## REVIEW OF LITERATURE

### Usability in E-Learning Objects

E-learning objects ought to possess attributes that render them accessible, collaborative, adaptable, reusable, durable, cost-effective, assessable, discoverable, managed, trustworthy, addable, detachable, and replaceable. E-learning systems and learning objects in their content strive to address the requirements of learners by employing a combination of cultural, technical, and pedagogical strategies to fulfill specific demands. From a pedagogical-educational perspective, the paramount characteristic of e-learning items is in their individualized nature. The inadequacy of e-learning objects from a pedagogical perspective arises due to their inconsistency in aligning with specific educational philosophies, disciplines, and approaches such as structuralism, cognitivism, and behaviorism. Furthermore, it is imperative that e-learning objects are developed in alignment with the principles of intercultural communication. In order to achieve success in the process of cultural learning, it is necessary to take into account the cultural learning objectives within each language and include information into the learning systems (Hanewald, 2009).

Longmire (2000) emphasizes the importance of considering various factors in the design of learning objects. These factors include flexibility, which allows for adaptability and customization; easy updating, ensuring that content remains current; consistent content management, promoting coherence and organization; suitability for personal learning, accommodating individual preferences and needs; interoperability between

different multimedia environments, enabling seamless integration; collaborative learning environment, fostering cooperation and interaction; accessible and understandable format, ensuring usability for all users; easy availability, facilitating widespread access; competence-based learning, emphasizing the development of specific skills and knowledge; intercultural awareness, promoting understanding and respect for diverse cultures; universal language, facilitating communication across different linguistic backgrounds; and technology use, harnessing the potential of technological tools in the learning process. However, it is worth noting that scholars conducting research in this field emphasize the significance of user-centered design concepts and the development of useful products in the context of e-learning objects (Corry et al., 1997; Dumas & Redish, 1993; Eason, 1988; Gould & Lewis, 1985; Shackel, 1991). When designing e-learning items, it is crucial to prioritize the learner and ensure that the content provided enhances their motivation to study (Zaharias, 2009, p.41). In essence, the concept of usability in learning objects pertains to the user's capacity to locate desired information or fulfill their expectations without the need for inquiries, obstacles, or reluctance.

In order for a product to be considered usable, it should possess qualities that are deemed useful, efficient, effective, rewarding, accessible, and learnable. To enhance usability, it is imperative to integrate user interface design, technical communication, and support services into the product during the process of product creation. Norman (1993) asserts that a formative e-object should possess certain characteristics. These include interactivity, the provision of feedback, the presence of specific goals, motivation, the ability to stimulate a sense of challenge, and the availability of appropriate tools. Additionally, such e-objects should not disrupt the learning process or introduce distractions. They should also align with cultural and pedagogical norms, while ensuring the maintenance of a seamless learning flow. E-learning objects have the potential to incorporate culture-based and blended learning theories, thereby including a diverse range of content such as movies, music, artistic items, and daily life aspects pertaining to the target culture. Additionally, these objects can offer insights into the worldview of individuals who speak the target language. According to Hunaiyyan et al. (2008), learning objects might be conceptualized as "cultural learning objects." Blandin, a critic of the exclusive adoption of user-centered approach in usability of e-learning objects, highlighted the significance of social aspects that influence the usability of online learning programs. Specifically, Blandin emphasized the impact of intercultural learning disparities and the concept of "learning culture" on usability. In line with scholarly discourse, it is imperative to consider usability not solely based on factors such as simplicity of use, motivation, and beauty, but also in relation to social and cultural learning behaviors. Furthermore, the examination of user experience should encompass a sociological perspective, as suggested by Blandin (2003).

The consideration of intercultural usability is a significant consideration while building e-learning materials. The prominence of pedagogical design is seen in online language learning environments. The subsequent analysis focuses on the technical interface dimension, with the aim of verifying the adaptability and user-friendliness of online language learning platforms. However, in the present day, it is insufficient to solely focus on pedagogical and technological usability while developing e-learning content. In the context of an increasingly interconnected global society, there is a growing emphasis on incorporating cultural considerations into the design of instructional approaches, particularly in relation to influencing the development of technical interface designs. The attitudes and behaviors of users in interface design are influenced by cultural factors. A correlation exists between the learning culture of learners and the design and usefulness of instructional approaches (Ogunbase, 2016).

The incorporation of user/learner-centered design has been given careful consideration, particularly in the assessment of the technological usability aspect of the Ana Dil Turkce e-learning system. The consideration of design, as a determinant of usability, is a crucial aspect within the framework of product development, specifically within the context of the individual-society-culture triangle. Venkatesh, Morris, and Davis (2003) posited that the association between performance expectation and behavioral purpose, as termed by the authors, is influenced by factors such as age, gender, experience, and culture, distinguishing their perspective from previous usability theories. Furthermore, the diverse requirements and preferences of numerous learners with varying learning styles need the ongoing development of any web-based educational platform. It is imperative for educational environments to consider the impact of institutional, legal, ethical, political, and cultural advancements on the curriculum.

In their study, Kukulska-Hulme and Shield (2004) identified the key factors that need to be taken into account when evaluating the usability of technology-assisted language learning. The focus of their research was on e-learning systems and materials designed for teaching foreign languages, with particular attention given to pedagogical design, intercultural usability, and interface evaluation. As stated by Kukulska Hulme and Shield (2007), it is imperative to assess and evaluate pedagogical usability, cross-cultural usability, and interface evaluation in technology-supported language teaching systems. Upon reviewing the existing literature pertaining to the usability of e-learning materials designed for the instruction of Turkish as a second language, two notable studies conducted by Goker (2019) and Ayhan (2019) emerge. In his 2019 study, Goker conducted an evaluation of the e-learning environment "3 Dakikada Turkce," which was specifically designed for teaching Turkish as a foreign language. The evaluation focused on many aspects of the e-learning system, including ease of navigation, design, accessibility, permanence, and efficacy. In a separate investigation, Ayhan (2019) employed the eye tracking technique to ascertain the cognitive ramifications of reading materials on learners in the context of teaching Turkish as a foreign language. The study also elucidated the role of these texts in Turkish instruction and the subsequent behaviors exhibited by learners. Based on the findings of both researches, it is evident that the determinants influencing usability encompass design characteristics, as well as individual and cultural variances.

## Intercultural Usability

Usability evaluations necessitate the consideration of various variables by researchers and designers. The components encompassed in this framework consist of learner, technological, pedagogical, and cultural aspects. The integration of pedagogical and technological aspects of technology-based learning, including content, interface, learning environments, and learning tasks, is designed to facilitate the use of technical-pedagogical tools in order to help learners achieve their objectives (Silius et al., 2003). The consideration of intercultural usability is essential alongside technical and pedagogical usability in technology-supported language learning systems (Kukulska Hulme & Shield, 2006). The criterion of interculturality, when accompanied by pedagogical learning contents, should be taken into consideration in order to facilitate collaboration among users of other nationalities. Hence, it is imperative to acknowledge and consider the significance of cultural disparities in e-learning artifacts (Son & Park, 2014). Satar (2007) asserts that the evaluation of an e-learning application should encompass an assessment of its usability as well as its didactic effectiveness. The usability elements encompassed by e-learning objects encompass a range of factors, including navigation, accessibility, consistency, visual design, interaction, learnability, content quality, utilization of multimedia tools, learning strategy, provision of educational feedback, instructional evaluation, student assistance and support, and accommodation of learner diversity. To enhance the intercultural applicability of e-learning materials, it is imperative to take into account several variables, including age, gender, and culture, which are contingent upon individual disparities and learning preferences within the educational setting (Satar, 2007). The user, as the focal point of analysis, serves as the foundation for the usability factors pertaining to e-learning products. Designers and educators should take into account the requirements and desires of users. Typically, individuals utilize things in accordance with their specific requirements. The designers assess the functionality, emotional aspects, purpose, duration of usage, and design, while considering the users' requirements.

Furthermore, it is imperative that the developed goods align with the cultural framework of the intended users, necessitating the adoption of a culture-oriented design methodology. In contrast, Marwa et al. (2022) conducted a study that focused on the utilization of websites as educational tools for teaching foreign languages, specifically English. Their analysis centered on intercultural communication and competency within these websites, highlighting the significance of intercultural competence in English language instruction. According to Marwa et al. (2022), the utilization of e-learning objects that are designed in alignment with intercultural learning can effectively stimulate English learners to engage in communication and collaboration. These e-learning objects encompass a diverse range of authentic learning materials, including text, images, audio, and video, which offer illustrative instances from various cultural backgrounds (p. 160). Naidu et al. (2020) conducted a study investigating the impact of online interactive language learning tools, including FluentU, Duolingo, Livemocha, and Hello English, on the acquisition of English language skills. The researchers emphasized the importance of incorporating cultural elements into the user interface, such as color selection and font type, as well as ensuring the tools offer flexibility in their usage.

Hence, seemingly minute elements such as color and font selection can exert an influence on the cultural attributes of e-learning artifacts. In Zaharias' (2008) study, the impact of cultural factors, including gender and national culture, on the usability of e-learning tools was investigated. The study involved participants from Turkiye, Greece, Bulgaria, and Romania. The findings revealed that the incorporation of color, typography, and graphics within the e-learning platform, along with a streamlined navigation system devoid of excessive redirection and multiple links, was perceived as beneficial by individuals from various national backgrounds within the study group. The research findings also indicate that in cross-cultural usability tests, distinct cultural groups primarily prioritize on-site navigation.

Intercultural user interface design (IUID) is a recognized approach aimed at enhancing cross-cultural and intercultural usability. This design methodology encompasses the diverse requirements of many cultures, taking into account their customs and traditions. Designers diligently consider these variables to ensure an inclusive and culturally sensitive user experience (Heimgartner, 2019). As to Alexander et al. (2017), culture-oriented website design encompasses several key elements, such as navigation, links, page layout, visual representation, multimedia tools, color, and content. Satar and Morshidi (2007) underscored the significance of cultural disparities and dimensions in influencing usability, coining the term "culturability" to describe the intersection of culture and usability. Therefore, the user-friendliness of an e-learning system is influenced by cultural values. Due to cultural variations, diverse opinions can arise regarding several elements, including backdrop, colors, images, and animations. In the context of exploring the correlation between usability features and cultural dimensions, Satar (2007) employs a conceptual framework that incorporates Hofstede's cultural dimensions and Nielsen's usability characteristics. Heimgartner and Windl (2013) suggest that a distinction exists between the notions of "intercultural" and "cross-cultural". The concept of "intercultural" values pertains to the acquisition of knowledge through the observation and analysis of distinctions between two or more cultures. According to Gonzalez (2011), the term "cross-cultural" pertains to the examination of both the similarities and contrasts that exist between two distinct cultural groups. Individuals from South American cultures tend to derive pleasure from engaging in dancing activities during celebratory events such as birthday parties. Conversely, individuals from North American cultures tend to exhibit a preference for participating in culinary endeavors and engaging in casual conversations during similar social gatherings. A study with a focus on cross-cultural analysis is being conducted to examine this particular circumstance. The term "intercultural" pertains to the examination of the behaviors that arise when individuals from two or more distinct cultures engage in interactions.

Every year, a substantial number of individuals engage in cross-border travel, encompassing not just physical movement across states but also traversing linguistic boundaries. In contemporary society, individuals hailing from diverse cultural origins are compelled to coexist harmoniously. The significance of intercultural communication and cultural learning has become increasingly paramount in contemporary times. There is a growing recognition of the importance of accurately identifying, understanding, and instructing the diverse speech patterns linked to different languages and cultures (Wierzbicka, 2006). In their study on intercultural usability, Hacker and Mandl (2008) investigated the behaviors of internet users from Taiwan and Germany. They discovered that users from these distinct cultural backgrounds exhibited varying performances when engaging in the same task on a shared website. The researchers based their investigation on Hofstede's cultural dimensions. Previous research (Downey, et al., 2005; Heimgartner, 2013; Schmitz et al., 2008) has examined the relationship between culture and usability, specifically by investigating Hofstede's cultural dimensions and Nielsen's technical usability features. These studies have found that the level of individualism or sociability in a culture has an impact on the usability of products. Previous studies have noted that the utilization of e-learning systems that possess the ability to accommodate individual variances, exhibit flexibility, incorporate intercultural communication materials, and demonstrate awareness of sensitivities in intercultural interaction, can be employed (Kuhnt, 2002; Lee, 1999; Zaharias et al., 2001).

Hunaiyyan et al. (2008) discuss the various cultural elements that are considered in the context of e-learning. These elements encompass language, social dynamics, political factors, economic considerations, religious aspects, technical dimensions, learner characteristics in learning design, communication and interaction styles, learning strategies, multimedia-based interface, and graphic design. According to Heimgartner (2017), user interface elements can be categorized into two main groups: visible elements, such as typeface, color, and window size, and unseen elements, including interaction speed, information display, and search bar.

When assessing e-learning objects and content, it is crucial to consider socio-political factors, particularly the disparities between Asian and European cultures, sensitivities, interactions between countries with strained relations, as well as content-related aspects and diverse concepts such as color, region, and belief. Graphics and images play a significant role as the visual language of a certain culture. The development of culturally-specific user interfaces can be advantageous in using the insights and understanding of a particular culture. The field of intercultural user interface design encompasses various aspects such as cultural factors, human-computer interaction, intercultural values, user interface characteristics, and methodologies for designing interfaces that are based around culture. Human-computer interaction encompasses direct intercultural aspects.

In light of Son and Park's intercultural usability recommendations for e-learning environments, it is imperative for a website to possess certain characteristics in order to facilitate effective intercultural language learning. These characteristics include the presence of a broad interaction network, the inclusion of authentic materials, the provision of grammatical and cultural information, accompanied by examples that are applicable to daily usage in the target language, and the incorporation of elements that reflect the nuances of the target culture. It is recommended that educational settings provide opportunities for learners to engage in self-assessment, task-oriented activities, and avoid any potentially discriminatory components (Son & Park, 2014). In summary, it can be asserted that elements and contexts that demonstrate awareness of cultural distinctions, such as the user interface of e-learning platforms, choices regarding color and font, immediate access to the intended hyperlink, availability of multiple language options on the website, consideration of religious, linguistic, and ethnic identities, exemplify instances of intercultural usability in e-learning materials.

## METHOD

### Research Design

The present study employed a mixed methods research design, incorporating both qualitative and quantitative research methodologies, to assess the intercultural usability of the "Ana Dil Turkce" e-learning system. Mixed methods research designs enable researchers to leverage the respective advantages of quantitative and qualitative data. This study was deemed appropriate for the mixed method approach due to its capacity to facilitate a comprehensive examination through the utilization of qualitative data for in-depth analysis and quantitative data for generalization (Creswell & Clark, 2018; Johnson & Onwuegbuzie, 2004; Tashakkori & Teddlie, 2003; Yildirim & Simsek, 2018). The present study employed a research design known as a "concurrent mixed methods approach." This approach incorporates the simultaneous utilization of qualitative and quantitative data. The objective is to undertake a comparative analysis, amalgamate, integrate, and broaden the scope of the acquired data (Creswell, 2021; Yildirim & Simsek, 2018). The research employs a cross-sectional survey approach for the quantitative component, while a case study design is utilized for the qualitative component. The research approach employed in this study is referred to as a combination of qualitative and quantitative methodologies. The quantitative findings demonstrate the associations and patterns across variables, while the qualitative findings provide insights into the subjective experiences and perspectives of individuals. Consequently, this particular framework provides a comprehensive comprehension and facilitates the interpretation of the findings (Creswell & Clark, 2018; Kukla et al., 2015; McBride et al., 2018; Meixner & Hathcoat, 2019; Morse, 1991).

### Participants

The research sample comprises individuals who are engaged in the acquisition of Turkish as a second language. These individuals have been registered in the system during the period spanning from 2020 to 2022, and they actively utilize the system. The quantitative sample of the study consisted of 211 students, whereas the qualitative sample comprised 25 students. The determination of the quantitative sample for this investigation was based on the random sampling method. The objective of this study is to make generalizations on Turkish language learners who utilize an online learning platform, based on the selected sample. Additionally, the study aims to minimize scope errors in the database and enhance the representational capacity. This research is supported by the works of Creswell (2021), Ilhan and Deniz (2021), and Tutar and Erdem (2020). The quantitative sample of the study consists of 211 participants who represent a diverse range of nationalities, originating from 50

distinct countries. The age range of the participants spans from 17 to 65 years. The selection of participants for the study's qualitative sample was based on purposive sampling, which aimed to capture a wide range of perspectives and experiences in order to gather comprehensive and reliable data. The purpose of purposeful sampling in qualitative research is to gather a comprehensive amount of data, with the intention of achieving the concept of "generalizability" (Creswell & Clark, 2018; Guba & Lincoln, 1982; Teddlie & Yu, 2007). The determination of sample size in qualitative studies is contingent upon the selected methodology. According to Nastasi and Hitchcock (2016), the recommended range for the sample size in qualitative research involving in-depth interviews is often between 10 and 30 individuals. In relation to the matter at hand, the study's qualitative sample encompassed a total of 25 individuals hailing from distinct countries, with ages ranging from 17 to 54 years. The participants willingly participated in the study. The research group, encompassing both qualitative and quantitative components, is discussed in the "Findings" section.

## Data Collection Tools

### Quantitative Data Collection Tool

In this study, as a quantitative data collection tool, a 5-point intercultural usability questionnaire consisting of 8 items graded in likert type was used. The questionnaire sections consist of gender, age, education level, experience in taking Turkish online education, ability to use online education tools, pedagogical, intercultural and technical-design usability categories. Internet and computer literacy of users in the was survey considered as a variable, therefore, related to online education technologies the category of usage skills and the experience of learning Turkish online items were prepared. The participants were questioned regarding their knowledge of using online learning resources and whether they had previously taken online Turkish courses. 48.3% (n=102) of the participants had never taken an online Turkish course previously, compared to 51.7% (n=109) of the individuals who had. The findings for the items related to the usage skills related to online educational technologies are shown in table 1. As a result of Cronbach Alpha used to examine the internal consistency between the test scores of this part of the questionnaire, $\alpha$ = ,741 was found.

**Table 1.** Descriptive Values Related to the Experience of Using Online Educational Technologies

| Expressions | n | $\bar{x}$ | s |
|---|---|---|---|
| I easily learn to use a new online training tool | 211 | 3,78 | 1,095 |
| I use online education resources to support my language learning | 210 | 3,83 | 1,033 |
| I use online educational technologies for problem-solving, critical thinking and developing my personal interests | 211 | 3,66 | 1,063 |
| I benefit from online education programs while doing my projects and assignments | 211 | 3,68 | 1,104 |
| I need help using online education tools | 211 | 2,96 | 1,247 |
| I use online education tools to reinforce the knowledge I learn in class | 211 | 3,66 | 1,058 |

Upon examining the feedback provided by users of Ana Dil Turkce e-learning objects regarding their usage skills related to online educational technologies, it becomes evident that participants do not encounter significant challenges when utilizing new online tools. Instead, they predominantly employ online tools to facilitate language learning and enhance personal development and cognitive abilities. Notably, these technologies are particularly utilized as supplementary resources and for reinforcement purposes in educational settings. This scenario suggests that e-learning objects have the potential to serve as a means of bolstering formal education. Furthermore, it has been observed that individuals utilizing online educational resources often necessitate support either from the system itself or from external sources. Based on the provided data (mean = 2.96, standard deviation = 1.247), it was noticed that users require assistance, either online or offline, when utilizing online educational tools such as the Ana Dil Turkce e-learning system and other similar e-learning platforms. There is a demonstrated need for technical support services.

The survey encompasses many demographic variables, namely gender, age, nationality, education level, and a personal information form to gather pertinent data. During the development of the questionnaire, items pertaining to pedagogy, technology, and initial drafts were generated through an examination of relevant literature on the measurement of cultural usability (Hemard & Cushion, 2001; Lund, 2001; Lewis, 2002; Jeng, 2005; Nokelainen, 2006; Shield & Kukulska, 2006; Lim & Lee, 2007; Liu et al., 2008; Weninger, 2010; Son & Park, 2014; Chuah et al., 2016; Cagiltay, 2018;). Prior to administering the survey items via an online platform, a panel of seven experts was consulted to gather their perspectives. Subsequently, the survey items were revised and restructured based on the recommendations provided by these experts. Subsequently, the questionnaire items were administered to the 30 participants as part of the pilot project. Based on the perspectives of the participants, items that were considered unnecessary have been eliminated.

### Qualitative Data Collection Tool

Interviewing is frequently used as a data collection tool, especially in the case study section of instructional design studies (Buyukozturk, et al. 2016). The questionnaire was composed of 6 primary and 5 secondary questions after the literature review. The structured interview form questions are as follows:

1. What do you think about the usability of the Ana Dil Turkce E-Learning platform?
    - What is your general opinion about the usability of the platform? Can you tell us about your expectations for the platform?
2. What are the features of the Ana Dil Turkce system that you think are useful?
    - Can you briefly explain the benefits of the platform according to you?
3. What are the negative experiences you have had in the Ana Dil Turkce system?
    - What are the problems you encounter when using the platform? (What are the reasons for the problems you encounter?)
        a) Which feature(s) of the system did you have difficulty(s) using?
        b) What kind of difficulty(s) did you experience?
4. What do you think about the effect of the e-learning objects in the Ana Dil Turkce system on your Turkish learning?
5. What do you think about continuing to use the system?
        a) What are your views on the design of the platform?
        b) How do you evaluate the platform as an educational environment?
        c) What are your opinions about the educational content on the platform?
6. What are your suggestions about the platform? How can the usability of the platform be improved?

The semi-structured interview form was rearranged after 7 expert opinions. Before proceeding to the data collection phase, scientific research and publication ethics permissions were obtained from the relevant institutions. Due to the COVID-19 pandemic, the entire data collection process was conducted online.

## Data Analysis

Quantitative data analysis involves the utilization of statistical methods to describe and analyze data in research. Firstly, the responses of the participants were evaluated. Subsequently, any unanswered responses were eliminated. Subsequently, the descriptive statistics for variables and categories were determined, including frequency, quantity, percentage, mean, and standard deviation. The mixed method data analysis procedure involved the integration of quantitative and qualitative data to facilitate their joint interpretation. Specifically, the descriptive values of the questionnaire items were scrutinized. Additionally, in order to assess the survey's reliability, the Cronbach Alpha internal consistency reliability coefficient was calculated for each sub-dimension of the survey, as presented in Table 2.

**Table 2.** Intercultural Usability Items Cronbach Alpha Result

| Category | Number of Items | $\bar{x}$ | s | Cronbach Alpha α |
|---|---|---|---|---|
| Intercultural Usability | 8 | 30,83 | 5,317 | ,848 |

According to Buyukozturk (2020), Cortina (1993), and Tutar & Erdem (2020), the Cronbach Alpha reliability internal consistency coefficient is deemed sufficient for the reliability of a measurement tool when it is 70 and above. Additionally, values between 80 and 1.00 are regarded as extremely dependable. Hence, it can be observed that the measurement employed in the study demonstrates the instrument's reliability as a measurement tool, encompassing its sub-dimensions of pedagogical and technical usability. The qualitative dimension of the study included content analysis, which is a sort of qualitative data analysis. The primary objective was to comprehensively comprehend the research data. Consequently, the integration of themes and categories was accomplished through a hierarchical structure. The initial phase of content analysis involved the coding of the data. The coding step of the content analysis employed the inductive method, as described by Creswell (2017), Strauss and Corbin (1990), and Saldana (2019). Following the consolidation and analysis of the codes, thematizations were conducted in order to elucidate the characteristics of the datasets and present comprehensible information. During the process of thematization, the identification of both similarities and differences in the data was undertaken. Various themes were established, including basic, primary, and secondary themes. The researchers employed the NVIVO 12 software tool to facilitate the procedures of theming and coding. The dependability of the determined themes and codes was assessed by obtaining the opinions of two experts. The data gathered in this study were assessed for reliability using the Miles-Huberman and Saldana model. Additionally, the themes identified in the data were analyzed by applying the same model to calculate the reliability coefficient. According to the study conducted by Miles et al. in 2014, it was found that... The internal consistency coefficient was found to be greater than 80%. Therefore, a consensus was reached between the perspectives of the expert and the researcher. The procedure of analyzing qualitative data was modified in accordance with Creswell's model, as depicted in Figure 1 (Creswell, 2017, p.197).

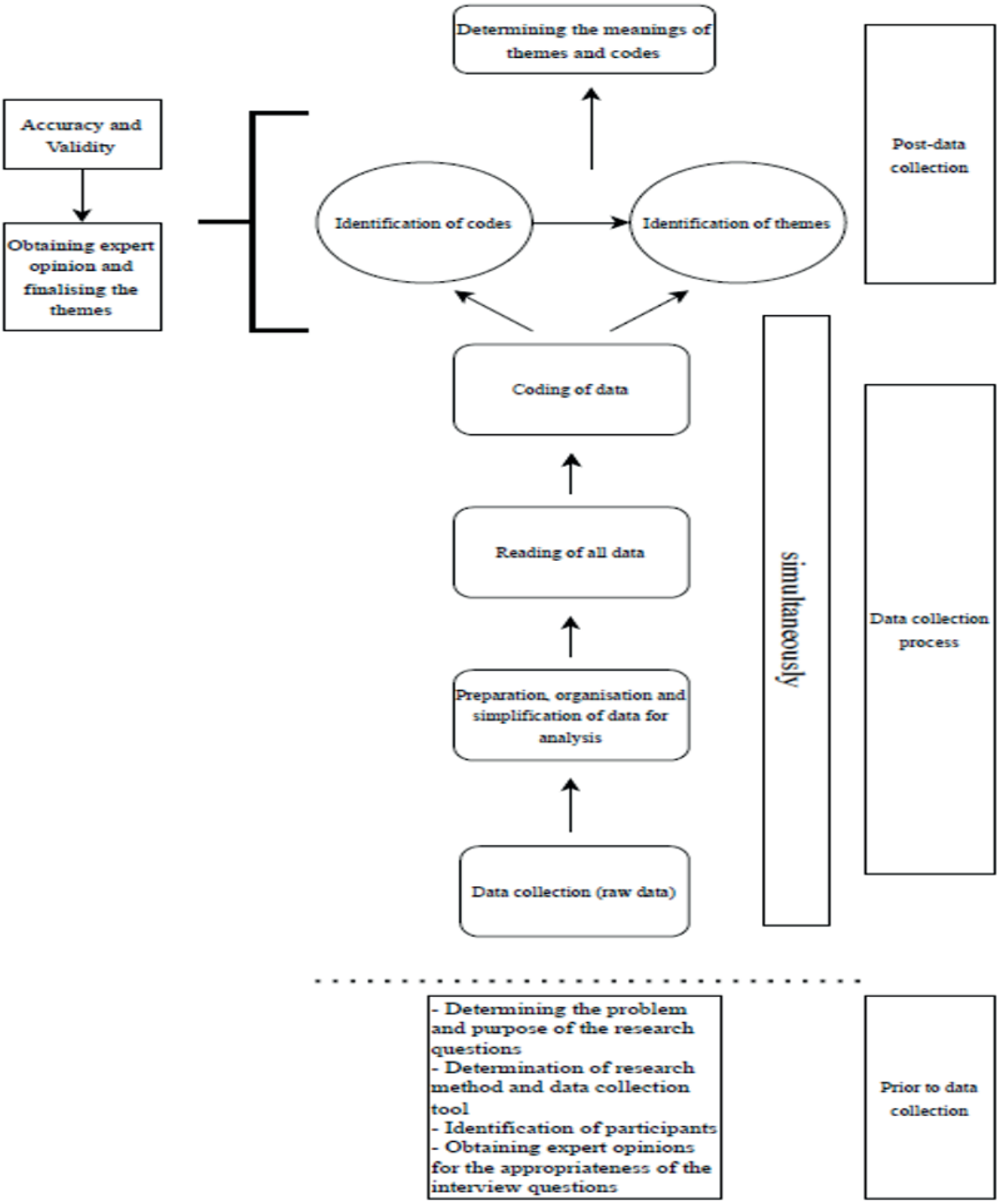


**Figure 1.** Qualitative Data Analysis Steps

In the process of data analysis, descriptive values of survey items and themes were compared in order to interpret qualitative and quantitative data according to the mixed method holistically.

## FINDINGS

### Quantitative Findings

#### Descriptive Data on Survey Participants

The average age of the survey participants is 27.41. Participants are from 50 different countries. It has been determined that most users come from the Middle East and Central Asian countries. The top 5 countries with the most system users are as follows: Syria (n:52, 24.64%), Kazakhstan (n:23, 10.90%), Iran (n:11, 5.21%) Egypt (n: 10), 4.74%) and Iraq (n:9, 4.27%). It has been determined that the countries with the least number of active users are European and American countries such as Germany, France, Belgium, Argentina, and Peru (n:1, 0.47%). Descriptive data regarding the survey participants are shown in the table 3 below:

**Table 3.** Information About Survey Participants

| Variable | n | % |
|---|---|---|
| Gender | | |
| Female | 118 | 55,92 |
| Male | 93 | 44,08 |
| Age | | |
| 17-24 | 110 | 52,1 |
| 25-34 | 53 | 25,1 |
| 35-44 | 29 | 13,7 |
| 45-54 | 16 | 7,6 |
| 55-65 | 3 | 1,4 |
| Education Level | | |
| High School | 52 | 24,6 |
| BA | 106 | 50,2 |
| MA | 34 | 16,1 |
| PhD | 11 | 5,2 |
| Others | 8 | 3,8 |
| Total | 211 | %100 |

#### Regarding Intercultural Usability Results

Upon examination of the descriptive statistics, it becomes apparent that the Ana Dil Turkce e-learning items provide a significant contribution to cultural learning. Based on user feedback, the e-learning objects within the system are seen to incorporate Turkish cultural representations, integrate cultural aspects alongside grammatical knowledge, and illustrate cultural distinctions. Table 4 presents the descriptive values according to the intercultural usability characteristics.

**Table 4.** Intercultural Usability Items on Survey and Descriptive Values

| Expressions | n | x̄ | s |
|---|---|---|---|
| There were elements representing Turkish culture | 210 | 3,83 | ,873 |
| There were intercultural tasks and practices | 210 | 3,67 | ,914 |
| Linguistic and cultural information was presented together | 210 | 3,74 | ,955 |
| There were examples of intercultural differences. (– such as traditions, courtesy rules, holidays…) | 210 | 3,79 | ,935 |
| The system enabled me to interested in the Turkish language and culture | 209 | 3,79 | ,981 |
| I had the opportunity to see the intercultural differences | 210 | 3,75 | ,942 |
| There was biased, racist and offensive language content | 209 | 4,39 | 1,019 |
| I learned new information about Turkish culture | 209 | 3,85 | ,993 |

In addition, it is seen that the system does not have prejudiced, racist and offensive language contents (The questionnaire item of this statement was reverse-scored). This situation shows that the Ana Dil Turkce e-learning objects have a sensitive approach to different cultures and values. On the other hand, looking at the second item of expressions, it can be said that the system should be developed and updated to create an interactive and collaborative cultural learning environment ($\bar{x}$=3,67, s=,914).

## Qualitative Findings

### Descriptive Data on Interview Participants

In order to provide a high level of diversity in qualitative data in accordance with the target audience of the system and the average age, 25 different interviews via an online meeting platform (Zoom) with 25 participants from different countries have been carried out. The average age of the participants is 26.2. The countries of the users are Albania, Ukraine, Kyrgyzstan, Iran, Azerbaijan, Jordan, Uzbekistan, Afghanistan, Morocco, Egypt, Syria, Mongolia, Indonesia, Hungary, Russia, Georgia, Tunisia, Pakistan, Iraq, India, Poland, Costa Rica, Romania, Algeria, United States. The demographic and descriptive data of the interview participants are in table 5.

**Table 5.** Demographic and Descriptive Data of The Interview Participants

| Variable | n | % |
|---|---|---|
| **Age** | | |
| 17-24 | 10 | 40,0 |
| 25-34 | 11 | 44,0 |
| 35-44 | 3 | 12,0 |
| 45-54 | 1 | 4,0 |
| **Gender** | | |
| Male | 13 | 52,0 |
| Female | 12 | 48,0 |

| | | |
|---|---|---|
| **Level** | | |
| A1-A2 | 5 | 20,0 |
| B1-B2 | 13 | 52,0 |
| C1-C2 | 7 | 28,0 |
| **Education** | | |
| High School | 1 | 4,0 |
| Bachelor | 14 | 56,0 |
| Master | 7 | 28,0 |
| PhD | 3 | 12,0 |
| **Location** | | |
| Asia | 14 | 56,0 |
| Europe | 5 | 20,0 |
| Africa | 4 | 16,0 |
| North – South America | 2 | 8 |
| Total | 25 | 100 |

During the course of the interviews, the technique of thinking aloud was additionally employed, whereby participants were instructed to interact with the system in real-time. Consequently, the researchers conducted observations on the participants' utilization of e-learning materials. Furthermore, the researchers also considered the ambient conditions in which the subjects were situated. As a result, inquiries were made regarding the intentions of learners in utilizing the system, taking into account the geographical location of the users, whether they reside within or outside the borders of Turkiye.

### Intercultural Usability Themes and Codes Obtained from Interview Data

The researchers employed the method of inductive content analysis to get comprehensive insights from the collected interview material. Subsequently, the data was utilized to generate codes, which were then employed to establish themes (see table 6). The prominence of the instructional part of the system was highlighted based on the perspectives of the students. The pedagogical usability component of e-learning items encompasses two key aspects: action-oriented learning and appropriateness for the intended purpose. Consequently, it is imperative for an e-learning object to engage the student actively and elicit practical applications in everyday situations. The incorporation of culture into the content of e-learning objects is imperative, given its significant role in everyday language usage. Based on the perspectives of the students, it is evident that the e-learning objects incorporated within the system encompass course materials that are well-suited for the dissemination of Turkish cultural knowledge. Within the framework of interculturality, certain participants expressed the viewpoint that the Ana Dil Turkce e-learning items incorporate components derived from diverse cultural backgrounds. In the realm of cultural transfer, it is worth noting that while the Ana Dil Turkce learning objects are typically well-received by students, there exist certain inadequacies. In light of the feedback and recommendations provided by the students, it is advisable to enhance the cultural learning environment within the system. The students' expectations from an e-learning system include the presence of substantial and culturally diverse e-learning objects.

**Table 6.** Intercultural Usability Themes and Codes

| Intercultural Usability | | | |
|---|---|---|---|
| Basic Theme | Primary Theme | Secondary Theme | Codes |
| Pedagogical Dimension | Action - Oriented Learning | Suitability for Purpose and Target | Course contents suitable for the transfer of Turkish culture |
| | | | Conformity to the cultural values of different languages and societies |
| Suggestions and Complaints | Learning Environment | Cultural Learning Environment | Cultural learning objects |

Some of the learners opinions that created the "Course contents suitable for the transfer of Turkish culture" code are as follows:

> *"There are elements related to Turkish culture. I like these. For example, there were examples of Eid-al-Fitr and Eid-al-Adha. I learned cultural behaviours such as visiting elders and children kissing elders' hands."*
>
> *"There was information about Ataturk in the system and this helped me to get to know Turkiye."*
>
> *"I learned about the issues that Turks pay attention to on important religious and official days."*

According to the statements of the users, there are elements in the system that are suitable for the cultural values of different languages and societies. It is seen that users from the Turkish world find e-learning objects understandable and easy and users have high expectations in the context of cultural learning objects. Participants from Arab countries stated that they did not see any cultural barriers in their system, while participants from Western countries emphasised that the system should include more content on Turkish culture. Cultural learning objects, which are determined according to the opinions of the users and are missing in the system, can contribute to the development of e-learning content. Especially, content related to Turkish history, natural beauties in Turkiye, Turkish cuisine, music, and Turkish cinema should be added to the system. Examples of the statements of the participants are as follows:

> *"There was respect for the Arabic course contents, my language and my culture. I really like these features."*
>
> *"As an Uzbek, I felt comfortable using the system. Because many words and cultural features are common."*
>
> *"Eating, drinking, guest culture for Turkish culture, more content on points such as important people, Turkish architecture and Turkish classical music it could be. In this system, I also want to learn about Turkish culture."*
>
> *"The elements of Turkish culture can be increased even more. There are many points I wonder about regarding cities in Turkiye, foods, historical buildings and Turkish series. This system can be enriched cultural objects like these."*
>
> *"Current content, historical personalities, and information about Turkish culture should be more. There are good examples relating to words that can be used when communicating between people. But I think the number of content related to Turkish culture is not much. There should be promotional content for the culture. For example, Turkish TV series, Turkish movies, Turkish music and artists."*
>
> *"There should be more content related to Turkish culture. There are elements of Turkish culture but they are not enough. Content related to important figures of Turkish history such as Ataturk, Fatih Sultan Mehmet, Sinan the Architect should be created."*

When the opinions of users of e-learning objects are examined, it is seen that interculturality in foreign language teaching does not leave the pedagogical dimension. During the interviews, the participants especially emphasized the cultural dimension of e-learning objects. In order to determine the intercultural usability of the Ana Dil Turkce e-learning objects, qualitative and quantitative data were compared and examined (Table 7). According to the findings, the system is not in a biased, racist and aggressive structure. In addition, the contents are useful in the transmission of Turkish culture and intercultural interaction.

**Table 7.** Comparison of Intercultural Usability Qualitative and Quantitative Data

| Qualitative Findings | | Quantitative Findings | |
|---|---|---|---|
| Themes | | Items | |
| Intercultural Learning Objects | Codes | Supporting Data $\bar{x} > 3,50$ | Reparable $\bar{x} < 3,50$ |
| Compatibility with cultural transfer and cultural differences | Course contents suitable for the transfer of Turkish culture | There were elements representing Turkish culture (3,83) | The number of intercultural tasks and exercises can be increased |
| | Conformity to the cultural values of different languages and societies | There were intercultural tasks and practices (3,67) | |
| | | Linguistic and cultural information was presented together (3,74) | |
| | | There were examples of intercultural differences. (– such as traditions, courtesy rules, holidays…) (3,79) | |
| | | The system enabled me to interested in the Turkish language and culture (3,79) | |
| | | I had the opportunity to see the intercultural differences (3,75) | |
| | | There was biased, racist and offensive language content (4,39) | |
| | | I learned new information about Turkish culture (3,85) | |

Upon examination of the results, it becomes evident that the quantitative and qualitative data mutually reinforce and provide coherence to one another. According to the feedback provided by the interviewees, there is a suggestion to enhance the quantity of information and exercises that showcase Turkish culture within the system. The item "There were intercultural tasks and practices (3.67)" received a comparatively lower score compared to the other items. Hence, it is imperative to enhance the cultural e-learning items within the system. Upon careful examination, it is evident that the system does not contain any problematic elements such as racist, offensive language content, or graphics. The content labeled as "biased, racist, and offensive language" (4,39) underwent reverse itemization and yielded a significantly high score during analysis. The article titled "Linguistic and cultural information was presented together (3,74)" has been observed to have garnered satisfactory ratings and user feedback that supports this aspect. The aforementioned data has the potential to yield insights into the extent of content diversity inside the system, as well as the level of satisfaction experienced by users.

## DISCUSSIONS AND CONSLUSION

The elements of intercultural usability in technology-assisted language learning systems necessitate the consideration of both technical and pedagogical usability. According to Kukulska Hulme and Shield (2006), Hence, the evaluation of Ana Dil Turkce e-learning items has been conducted within the framework of

intercultural usability of learning objects and the promotion of cultural awareness. Upon interpretation of the qualitative and quantitative data, it becomes evident that the system encompasses e-learning items that are well-suited for cultural learning. The cultural sensitivity of the e-learning objects within the system is evident. Pedagogical learning content has a crucial role in fostering interculturalism, facilitating collaboration among individuals from diverse national backgrounds. The evaluation criteria of cultural differences and learner diversity in e-learning objects are of paramount importance and should not be overlooked (Son & Park, 2014; Satar, 2007). Furthermore, it is recommended to augment the quantity of cultural learning materials available in Ana Dil Turkce and enhance their quality. In order to enhance the usability rating of an e-learning system, it is imperative that the material aligns with the principles of intercultural communication (Downey, 2005).

Liaw (2006) posits that foreign/second language learners make efforts to comprehend both the target culture and their own culture when utilizing websites designed for language instruction. Hence, there exists an interplay between the target culture and the dominant culture. Consequently, learners seek out shared aspects between the target culture and their own culture. Therefore, in the context of foreign language instruction, the development of e-learning materials should be based on the principles of universal intercultural communication and should align with the specific cultural aspects of the target language. During this interim period, it is possible to emphasize and compare the shared aspects between the dominant culture and the culture under examination. Furthermore, it is imperative that learning objects designed for intercultural usability are capable of establishing online environments that facilitate active learning, reflective thinking, need-oriented approaches, social engagement, and constructive and practical utilization (Son & Park, 2014; Liddicoat et al., 2003). When developing e-learning objects for the purpose of teaching Turkish as a foreign or second language, it is important to consider the following aspect.

The development and implementation of e-learning materials designed for the instruction of Turkish as a foreign language should aim to mitigate the challenges posed by linguistic and cultural differences for learners. In order to facilitate the effective utilization of cultural e-learning objects, it is imperative to situate them inside environments that offer flexibility for individual learners, allowing for personalized follow-up. Additionally, these environments should foster opportunities for social interaction among students, as highlighted by Liu et al. (2010) and Schat et al. (2021). Furthermore, it is imperative to consider the divergence in cognitive processes and epistemological orientations between learners from Western and Eastern cultures when designing learning materials (Jung, 2014). Manufacturers of learning objects must to possess a comprehensive understanding of the contrasting characteristics between individualistic and collectivist societies, particularly in the present context. The e-learning objects for the Turkish language should prioritize interactive resources that facilitate collaboration among learners from diverse cultural backgrounds, as well as independent learning.

The concept of intercultural usability refers to the intentional design of goods or services to facilitate the quick and effective utilization by individuals from diverse cultural backgrounds. This encompasses the customization of design elements and user interfaces to accommodate ethnic diversity in user preferences, expectations, and behaviors. In the contemporary era of globalization, the accessibility of products and services to individuals from diverse cultural backgrounds necessitates a heightened emphasis on intercultural usability. To ensure the accessibility and user-friendliness of their designs for a wide range of users, designers must possess an awareness of cultural factors that can impact usability. These factors encompass variations in language, color perception, spatial orientation, and social norms.

Examples of intercultural usability issues in design encompass the subsequent instances:

1. *Language:* Ensure that user interfaces are offered in a variety of languages and that proper use is made of language-specific fonts and character sets.
2. *Color:* Use color schemes that are appropriate for various cultural situations. Be aware of how different cultures perceive color and what it means.
3. *Navigation:* Use sensible, simple-to-understand navigation structures and iconography for people from many cultural backgrounds.
4. *Social norms:* Adapt user interfaces and interaction patterns in accordance with variations in social standards and cultural etiquette, such as preferences for direct or indirect communication.

The incorporation of intercultural usability has the potential to enhance user satisfaction, mitigate errors and misunderstandings, and ultimately enhance the overall user experience. When developing goods and services intended for a global market, it is imperative to consider various factors. Behavioral and cultural differences can give birth to a range of web usability concerns. E-learning objects have the potential to incorporate several variables, including color, visuals, expressions, icons, character sets, images, symbols, and time and date formats. The interpretation of a webpage may vary significantly among users from diverse cultural backgrounds. Certain metaphors have the potential to misconstrue and perplex visitors in terms of navigation, interaction, or the visual aesthetics of a website, and may even elicit annoyance.

One of the primary conclusions drawn from this study is the necessity for an increased provision of Turkish cultural content to cater to the needs of users. Furthermore, it may be argued that cultural learning objects serve as a vital element that enhances the pedagogical instruction of the Turkish language. Additionally, it is important to ensure that cultural learning objects in the Turkish language are adapted to facilitate interaction and collaboration. It has been noted that learners from the Turkic world exhibit a notable absence of challenges related to language and cultural barriers when utilizing e-learning resources. Nevertheless, in order to facilitate the widespread adoption of Turkish as a foreign or second language, it is imperative to extend its availability to Western nations with limited user bases. Additionally, these initiatives should aim to familiarize these groups with Turkish culture. Cultural learning items such as Turkish TV programs, music, Turkish food, Turkish architecture, and significant historical figures from Turkiye can be utilized as content for teaching Turkish culture and language. To ascertain the substance and technical shortcomings of the e-learning items within the system, it is important to carry out a periodic needs analysis.

## Implications

General principles of intercultural language learning; It has developed on the concepts of sociocultural content, communication, instant interaction, learner and attitude towards learning. In order to improve the usability of websites prepared for foreign language learning in an intercultural context, the following points should be considered:

1. There must be specific and exclusive intercultural goals and examples of daily language use. Visual and audio content such as video, graphics, and text should be rich and diversity.
2. Cultural features, customs and traditions, special days and content that suggest social sensitivity should be included.
3. Content that will increase learners' interest in the target culture should be produced.
4. In addition to e-learning objects, instructors should interact with learners and conduct individual and group interviews.
5. Sensitive points such as language, religion, and race should be taken into account, and there should be no derogatory or racist elements.
6. When evaluating the general usability of foreign language learning objects and websites, technical, pedagogical, and intercultural usability concepts should be considered equally.
7. In intercultural usability studies, as much diversity as possible between experimental groups should be ensured.

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