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# THE USE OF 21ST CENTURY SKILLS BY SECONDARY SCHOOL ENGLISH LANGUAGE TEACHERS AND THE CHALLENGES THEY FACE

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# ABSTRACT

The purpose of this study is to investigate to what extent secondary school English language teachers use 21st century skills and whether their demographic backgrounds show a significant difference in teaching these skills. Another purpose of the study is to reveal the challenges teachers face while infusing these skills in their lessons. A mixed-methods research design was employed to achieve the objectives. The data were collected digitally with 21st century Teaching and Learning scale and semi-structured interviews in the 2020-2021 academic year. The study was conducted with 119 Secondary school English language teachers and 26 teachers participated in the interviews. The findings of the scale revealed that the most used 21st century skill was using technology as a tool for learning, and the least used skill was local connections. Based on t-test results, it was found out that working in private or public schools showed a significant difference in using these skills, and private school teachers employed 21st century skills in their lessons more than public school teachers. In addition, it was revealed that teachers who received training on 21st century skills used some skills more than those who did not. It was also uncovered that the years of experience had a role in applying skills, accordingly, teachers with less years of experience gave more place to some skills more than teachers with more years of experience. Educational status of the teachers did not differ significantly in teaching 21st century skills. The results of the content analysis of the interviews revealed that the lack of qualified pre and in-service training, inadequate curriculum, lack of infrastructure and materials, and unsupportive attitudes of administrators were the challenges faced by teachers.

**Key words:** 21st century, 21st century skills in English Language Teaching, Challenges of Teachers, Secondary School English Language Teacher

**Başlık:** Ortaokul İngilizce Öğretmenlerinin 21.yy. Becerilerini Kullanımları Ve Karşılaştıkları Problemler

**Yazar:** Yeliz BOLAT

# ÖZET

Bu çalışmanın amacı, ortaokul ingilizce öğretmenlerinin 21.yy. becerilerini ne ölçüde kullandıklarını ve katılımcıların demografik bilgilerinin bu becerilerin kullanımında önemli bir fark gösterip göstermediğini araştırmaktır. Araştırmanın diğer bir amacı ise öğretmenlerin 21. yy. becerilerini kullanırken karşılaştıkları problemleri tespit etmektir. Araştırmanın amaçları doğrultusunda karma yöntem araştırma deseni kullanılmıştır. Veriler, 21. yy. Eğitim ve Öğretim Ölçeği ve yarı yapılandırılmış görüşmeler ile 2020-2021 eğitim ve öğretim döneminde dijital ortamda toplanmıştır. Araştırma, ortaokulda görev yapan 119 ingilizce öğretmeni ile gerçekleştirilmiş olup, açık uçlu görüşmelere 26 öğretmen katılmıştır. Ölçeğin bulguları, en çok kullanılan 21.yy. becerisinin teknolojiyi öğrenme aracı olarak kullanma olduğunu, en az kullanılan becerinin ise yerel bağlantılar olduğunu ortaya koymuştur. T-testi sonuçlarına göre ise özel veya devlet okullarında görev yapmanın bu becerileri kullanmada önemli bir etken olduğu, özel okulda görev yapan öğretmenlerin devlet okulunda görev yapanlara göre bu becerilere derslerinde daha fazla yer verdikleri bulunmuştur. Ayrıca, 21.yy. becerileri üzerine eğitim almış öğretmenlerin, almayan öğretmenlere göre bazı becerileri daha fazla kullandıkları saptanmıştır. Tek yönlü Anova sonucu ise daha az kıdem yılına sahip öğretmenlerin daha fazla kıdem yılına sahip olan öğretmenlere kıyasla 21.yy. becerilerinin bazılarına daha sık yer verdiklerini ortaya çıkarmıştır. Diğer yandan, öğretmenlerin eğitim durumlarının bu becerileri kullanmada bir farklılık göstermediği bulunmuştur. Görüşmelerin içerik analizinin sonuçları ise, hizmet öncesi ve hizmet içi eğitim eksikliği, yetersiz müfredat, alt yapı ve malzeme eksikliği ve yöneticilerin destekleyici olmayan tutumlarının öğretmenlerin bu becerileri uygulamada karşılaştıkları sorunlar olduğunu ortaya koymuştur.

**Anahtar Kelimeler:** 21.yüzyıl, İngilizce öğretiminde 21.yüzyıl becerileri, İngilizce Öğretimi, Öğretmenlerin problemleri, Ortaokul ingilizce öğretmenleri

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# CHAPTER 1: INTRODUCTION

## 1.1. Background of the Study

With the advancement of technology in all areas of life and globalization as well as scientific developments, the way people work and live in the 21st century has radically changed. As a result of this change, unlike the 20th century when people had to have 3R skills (reading, writing and math), higher-level skills are needed in the 21st century to be successful in business and daily life (Trilling and Fadel, 2009). These required high-level skills are called 21st century skills. According to Ananiadou and Claro (2009) *"21st century skills are those skills and competencies young people will be required to have in order to be effective workers and citizens in the knowledge society of the 21st century."* (p.8). As stated in the definition, having 21st century skills is essential to be employable in the 21st century because many leading companies have begun to seek employees with 21st century skills that enable them to survive and compete in the national and international arena. As Levy and Murnane (2004) pointed out, the demand for routine production employees has decreased sharply, instead the need for the mind workers with high skills such as creativity, collaboration, communication, critical thinking has increased significantly. As a result, 21st century skills have become an indicator of a well-functioning economy and society, and thus, countries with citizens with these skills have been at the forefront of economic developments.

Although 21st century skills have become a must in all areas of life, especially in the world of work, many studies (Casner-Lotto & Barrington, 2006, Microsoft, 2011) have shown that employers are not satisfied with workers because they lack these skills. At this point, it has been understood that 21st century skills should be integrated into the curriculum. Many frameworks have emerged to bridge the gap between real-life needs and education, such as P21 (Partnership for 21ST Century Skills), ATC21S (The Assessment and Teaching of 21st Century Skills Framework), Cambridge Life Competencies and Framework and OECD conceptions. Based on the current frameworks, Hixson, Ravitz, and Whisman (2012) brought together 21st century skills to better guide

teachers' practices and developed a scale to measure 21st century skill practices of teachers used in this study and these skills are listed below:

- Critical thinking
- Collaboration
- Communication
- Creativity and innovation
- Self-direction
- Making local connections
- Making global connections
- Using technology as a tool for learning

Teachers play a crucial role in raising citizens with above mentioned 21st century skills for a well-functioning society. EFL (English as a Foreign Language) teachers in particular have a responsibility to integrate these skills into their lessons, as English has become the language of international and even national communication. Unlike in the past, now, language learners are required to use the language for more complex purposes, such as international communication and collaboration, presenting complex ideas, and interpreting fast changing information (Pardede, 2012). As Fandiño Parra (2013) points out, 21st century skills and English language teaching are inseparable and learners of English must develop global connections, self-direction, creativity, critical thinking, communication and collaboration skills. It is the responsibility of language teachers to equip students with 21st century skills from primary school to university. Accordingly, the present study unveiled to what extent English language teachers working in secondary schools integrate 21st century skills into their classes. Based on the existing studies in the literature (Anderson, 2020; Eker, 2020; Ekinci, 2019; Güvendir, 2017; Hardiman, 2020; Kaçar, 2020; Korkmazgil, 2015; Orak, 2019; Pilpe, 2020; Rice, 2017; Stover, 2018; Wattanavorakijkul, 2019; Wilcox, Liu, Thall, & Howley, 2017), it has been observed that teachers have some difficulties in integrating the above mentioned skills into their teaching practices. Within the scope of the study, the challenges they face were uncovered.

## 1.2. Statement of the Problem

As a consequence of aforementioned reasons, the 21st century has necessitated reform in education to best address the needs of the economy and society (Prensky, 2014). In order to prepare the current generation for a more certain, complex, and ambiguous world, 20th century education mentality must be abandoned, instead, students must be introduced to 21st century skills. At this point, teachers are at the forefront of this reform movement and have the responsibility to introduce 21st century skills to their students. This also applies to English language teaching (ELT).

The rapid spread of English has affected all areas of life and the economy has been one of the most affected areas because the global knowledge economy has demanded employees with a good command of English combined with 21st century skills (Warschauer, 2000). This situation has caused language teaching policies to change all over the world, including Turkey. MoNE has made some regulations in ELT. According to the current language teaching policy, English language learners are required to have competencies compatible with the 21st century to be successful in their future careers and life. English language teachers' roles are to integrate 21st century skills into their classes to achieve this goal.

While it is important to include these skills at the secondary school level, most current research has focused on whether these skills are included at tertiary education. To the researcher's knowledge, there is no current study which specifically investigates to what extent English language teachers working in secondary schools integrate 21st century skills into their classes and whether their demographic features affect their practices. In addition, the existing literature has shown that teachers do not practice the mentioned skills frequently, but there are few studies investigating the reason for this situation. In this study, answers to these questions were sought.

## 1.3. Purpose of the Study

Over the past decades, the use of English has spread sharply all over the world in such areas; global media, scientific and ICT advancements, international forums, business, politics, finance, diplomacy, sports, and entertainment (Pardede, 2012). With its widespread use in many fields, the purpose of use has changed as well. Non-native speakers of English are required to use the language for more complex purposes in a globalizing world. To address these complex purposes, the users of this language must use 21st century skills. In order to meet this challenge of the new era, the Ministry of National Education of Turkey (MoNE) has changed its language teaching policies and started including English lessons in the curriculum of primary education. Language teachers' responsibility has changed in accordance with the regulations. They are required to address the skills needed in the 21st century. As Kirkgoz (2005) argued, there is always a significant gap between language policies and teaching practices, therefore; it is needed to investigate the practices of teachers. Since it is important to acquire 21st century skills from the early stages of education, the aim of the quantitative part of this study is to investigate to what extent English language teachers working in secondary schools employ 21st century skills and whether their demographic features affect their practices. On the other hand, the purpose of the qualitative part is to unveil the challenges faced by teachers while applying 21st century skills.

## 1.4. Significance of the Study

English is the language of the 21st century, hence, English language teaching (ELT) has gained important ground recently (Goldfus, 2011). As with other subject areas, it has been understood that the focal point in ELT must deviate from traditional methods, instead, it needs to embrace 21st century skills to prepare the current generation for the reality of tomorrow (Pardede, 2020). As the change in education starts with the teaching practices of the teachers, the researcher handled the issue on the side of the teachers. The integration of 21st century skills into English classes is a hot topic and there are no studies specifically investigating secondary school English language teachers' 21st century skills practices and the challenges they face. Thus, this study will provide more information

about the current practices of teachers and the challenges they face in applying 21st century skills, and hence, policy makers, teacher trainers, researchers, principals, and educators will be able to benefit from the results of this study in terms of identifying teachers' practices and their challenges. In addition, this research will raise awareness for teachers to integrate 21st century skills into their teaching practices. This study also bears importance as to if years of experience, education level, training on 21st century skills and the type of school they work in have any significant difference on the practice of 21st century skills of English language teachers.

## 1.5. Research Questions

In accordance with the purposes of the study mentioned above, the following research questions are aimed to be answered:

1. To what extent do secondary school English language teachers integrate 21st century skills into their teaching practices?
    a. To what extent do secondary school English language teachers use critical thinking, collaboration, communication, creativity and innovation, self-direction, global connections, local connections, and using technology as a tool for learning skills?
2. Do secondary school English language teachers' 21st century skills teaching practices significantly differ according to their years of experience, the type of school they work, the level of education, and whether they received training on the skills?
3. What are the challenges faced by secondary school English language teachers when applying 21st century skills?

## 1.6. Assumptions

In this study, the following assumptions are accepted.

1. Expert views on data collection tools are adequate.
2. The researcher will adhere to research ethics.

3. Participants will answer the questions in a sincere and impartial manner.
4. Uncontrollable variables will affect each attendee equally.
5. The most appropriate research design and techniques that will best answer the research questions are selected.

## 1.7. Limitations

The present study is limited to

1. 2020-2021 Academic Year,
2. 119 English language teachers working in secondary schools,
3. The quantitative and qualitative data obtained through Google forms.

## 1.8. Definitions of the Key Terms

**21st Century Skills:** The term 21st century skills refer to the key competencies required to be successful in the world of work and life of the 21st century (Care et al., 2012), and these competencies include critical thinking, collaboration, communication, creativity, self-direction, making global and local connections, and using technology as a tool for learning.

**Critical Thinking Skills:** They refer to analyze complex problems, explore questions with no explicit answers, evaluate different perspectives of view or sources of information, and draw sound conclusions grounded on evidence and reasoning (Hixson, Ravitz, and Whishman, 2012).

**Collaboration Skills:** They refer to effectively and respectfully participating in teams to achieve a common goal and taking responsibility for completing a task (Hixson et al., 2012).

**Communication Skills:** It means organizing one's thoughts, data and findings and effectively sharing them verbally and in writing through various channels (Hixson et al., 2012).

**Creativity and Innovation Skills:** According to Hixson et al. (2012) "*they refer to students being able to generate and refine solutions to complex problems or tasks based on synthesis, analysis and then combining or presenting what they have learned in new and original ways"* (p.8).

**Self-Direction Skills:** They mean taking responsibility for learning, evaluating one's own work, and responding to feedback (Hixson et al., 2012).

**Global Connections:** It refers to an understanding of universal issues, including awareness of geography, culture, language, and historical background of other cultures (Hixson et al., 2012).

**Local Connections:** It refers to learners who are capable of applying what they have learned to local environments and community issues (Hixson et al., 2012).

**Using Technology As a Tool for Learning:** It refers to learners who are able to guide their learning and produce products by utilizing suitable information and communication technologies (Hixson et al., 2012) .

## 1.9. Abbreviations

**3RS:** Reading, Writing and Arithmetic

**ATC21S:** The Assessment and Teaching of 21st Century Skills Framework

**EFL:** English as a Foreign Language

**ELT:** English Language Teaching

**CT:** Critical Thinking

**ICT:** Information and Communication Technologies

**ISTE:** International Society for Technology in Education

**MoNE:** The Ministry of National Education of Turkey

**OECD:** The Organisation for Economic Co-operation and Development

**P21:** Partnership for 21st Century Skills

**SPSS:** Statistical Package for the Social Sciences

**SDL:** Self Directed Learning

**TPCK/TPACK:** Technological Pedagogical and Content Knowledge

# CHAPTER 2: LITERATURE REVIEW

In this chapter, the theoretical background of the study is presented. First, in order to better understand the rationale between education and 21st century, 21st century and its impact on education is explained elaborately. After that, within the scope of this research, 21st century skills are explained in detail in relation to education and more specifically English language education. Finally, the critical role of ELT in the 21st century is presented.

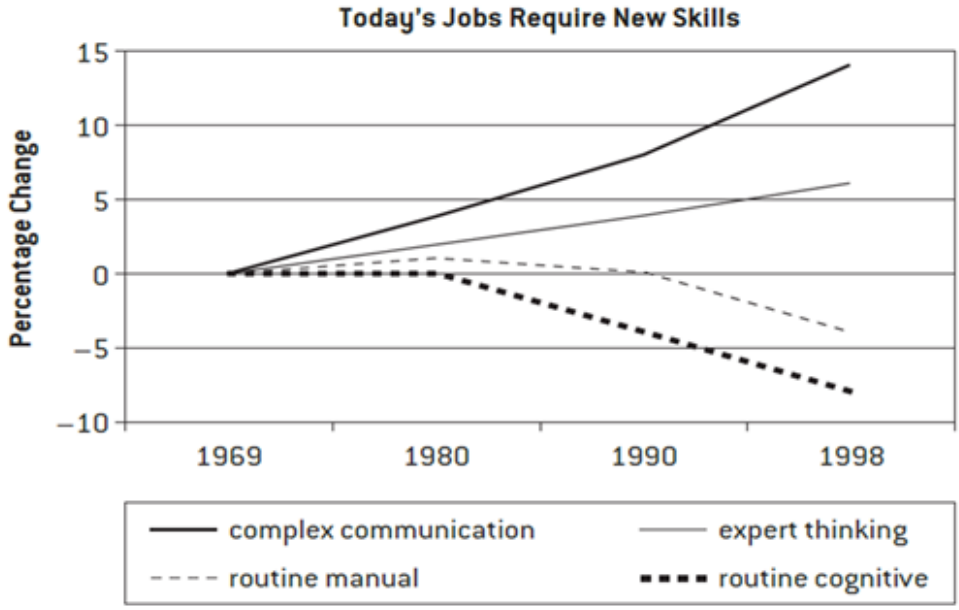
## 2.1. The 21st Century and Its Impact on Education

In the 20th century, those individuals who were adept at 3Rs (reading, writing and arithmetic) were recognized as successful in the world of work and society. In the industrial setting of the 20th century, people were expected to apply 3Rs to the work environment for the development of the country's economic welfare (Wang, 2012). Accordingly, the education system was shaped around the expectation of the world of work. Thus, students were supposed to memorize known facts, dates, and do arithmetic (Saavedra & Opfer, 2012). In accordance with this expectation, curriculum contained digested facts and simple arithmetic calculations (Dede, 2007, 2010; Prensky, 2014; Trilling & Fadel, 2009; Voogt & Roblin, 2010; Wang, 2012). However, with the advancement of ICT and globalization, foundational changes in the economy, jobs, and businesses, the world has changed drastically and industrial era have left its dominance to the information and knowledge age, where some certain skills, so called 21st century skills, have become the driving source of the economy and the society's everyday life (Care et al., 2012; Greenhill, 2010; Trilling & Fadel, 2009; Voogt, 2008; Wang, 2012). In this mentioned knowledge and information age, economy has grown fast and incredibly with the help of advanced technology, as a result of this, computers have begun to take on, replace, or complement much of the labor accomplished by individual human beings in those sections; operating information and standards-based tasks (Levy & Murnane, 2004). The shift from human labor to computers ended up decreasing the number of employees who were working in the jobs requiring low skills such as assembly line work

or rule-based tasks. According to Drucker's report (2001) total numbers of workers in the manufacturing sector halved between 1960 and 1999, in contrast to this fall, the physical production of the manufacturing doubled or tripled. This drastic shift in the economy necessitated some essential skills for human beings to function well in the society and be employable and participate fully in the world of work. Instead of routine production employees that do repetitive task and have low skills as in the 20th century, a need for the 'mind workers', who are able to identify and solve problems, mediate information, have high skills such as complex communication, expert thinking, creativity, collaboration, communication and critical thinking, has arised for advanced global and national economies (Reich, 1992, as cited in Voogt, 2010). In advanced economies, the demand for high skilled workers increased throughout the time as shown in the Figure 1.

**Figure 1.**

*New Skills for 21st Century Work (Levy and Murnane, 2004, as cited in Trilling & Fadel, 2009, p.8)*



As a consequence of aforementioned shifts in the 21st century, a change in education has become mandatory for a well functioning society and economy (Care et al., 2012). It is a known fact that there is a strong link between education and economic development and education plays a central role in assuring national wealth and uplifting economic growth (Stevens & Weale, 2003; Trilling & Fadel, 2009). Whereas reading, writing, arithmetic, and scientific skills dominated education as core subjects in industrial society, although they are still necessary at some point, they are insufficient for the economic demands and everyday life of the 21st century (Wang, 2012). Not only skills, but also the meaning of literacy has changed since the 20th century. In the 21st century, literacy has become more associated with information literacy, media literacy and ICT literacy (Voogt & Roblin, 2010). With new definitions and expectations from business world, 21st century skills as an umbrella term have become mandatory in education to meet the needs and it is defined as *"those skills and competencies young people will be required to have in order to be effective workers and citizens in the knowledge society of the 21st century"* (Ananiadou & Claro 2009, p.8) 21st century necessitates a shift in education system to prepare students for a future which is

- more certain, complex, ambiguous than previous centuries
- changing drastically which human beings have never experienced such swift change
- providing new technologies that enhance and extend their brains and supplying them new skills and capacities that human beings never had before. (Prensky, 2014)

Many of the jobs that today's learners will have in the future do not exist yet (Trilling & Fadel, 2009). In this complex era, chief responsiblity of education is to equip students with 21st century skills to handle new challenges and fully participate in the economy and society (Luna Scott, 2015; Trilling & Fadel, 2009). Previous century's traditional assessment-driven and teacher-led education has failed to meet the needs of fast-changing demands. With the latest advancement of pedagogy, termed as 'Pedagogy 2.0', teachers' roles have been redefined (Luna Scott, 2015). In the previous centuries, teachers' roles were to disseminate the knowledge and convey the content. However, as

architects of learning, today's teachers' roles have changed chiefly and they are expected to function as contributors of the course content, learning coaches, change agents, operators of the 21st century skills, inspirational pioneers to have students explore different applications for the competencies and knowledge they have mastered, facilitators, mentors, learning coordinators, and assessors (Luna Scott, 2015; Wang, 2012).

In sum, the 21st century has dawned with many changes and challenges. Fundamental changes in economy, jobs and businesses, thanks to the latest advancement in ICT and globalization, have reshaped the world of work and the way people work and live. These changes demand human beings have different sets of skills such as creativity, communication, collaboration and critical thinking to succeed and be employable in this age. The demand for low skills jobs has decreased sharply, in contrast, the demand for high skills jobs has increased over the period of time. It is the responsibility of education to equip individuals with these high skills. Although the previous generation's teacher-led education system has become irrelevant and failed to meet the fast changing demands for skills in the world of work (Greenhill, 2010; Prensky, 2014; Wang, 2012), it is still in use. Nonetheless, as known, those education systems and countries which embedded 21st century skills into their curricula, have competent teachers in this field and equip young generations with the updated skills will be successful today and in the future. In this regard, twenty- first learning is required to be compatible, engaging, highly effective and student-centered (Luna Scott, 2015).

## 2.2. 21st Century Skills

The concept of 21st century skills naturally arose and evolved in the U.S with the aim of changing educational goals to equip U.S. citizens for the needs of the 21st century world of work (Pardede, 2020). Although the concept is U.S.-based, many countries have begun to change their education policies in line with 21st century skills, after appreciating its impact on the welfare of nations in all areas from the economy to education. In the following sections, the mentioned 21st century skills are discussed one by one.

### 2.2.1. Critical Thinking

Even though critical thinking is as old as human civilization and came out even before the school system was born (Facione, 2015), it has gained utmost importance in the 21st century and has been recognized as one of the super skills that today's learners must master on it (Kivunja, 2015a). Its significance for today's world has been proved in some studies. For example, according to American Management Association's (AMA, 2012) research in which 768 managers and executives were polled about the importance of the 21st century skills to their organization, 70 percent of the participants identified critical thinking as the most crucial skill to succeed in the globalized and fast changing world of work. These employers in AMA's survey stated that 3Rs are not sufficient without thinking critically, solving problems and collaborating effectively. Consistent with AMA's survey, another research that was conducted to 400 employers found out that 92 percent of the participants rated CT as one of the most standing skills (Casner-Lotto & Barrington, 2006). Similarly, the Education Testing Service (2013) found out that leaders from 200 companies voted critical thinking as the most essential skill for both academic and career success. Tapper (2004) also stressed the significance of CT and put forward that executives demand employees who are adept at linking their critical thinking skill to the workplace. Apart from business world, a study was carried out among chief academics from 433 higher-education institution and the result showed that CT was seen as the most important skill for learners to acquire (Association of American Colleges and Universities, 2011).

In spite of its importance in many areas of life, in the literature, there is no one-size-fits all definition for CT. Nevertheless, there is a commonality about accepting CT as a meta-cognitive process by associating it with human cognitive abilities (Saleh, 2019).

CT is assuredly one of the most discussed issues in education considered to have a pivotal role in decision-making, reasoning and argumentation (Ennis, 1985; Facione, 1990; Halpern, 2013; Ventura et al., 2017). Dating back to 1956, Bloom's taxonomy is the pioneer and the most mentioned framework to conceptualize and categorize CT in education. Since Bloom's Taxonomy was introduced, it has become a well recognized instrument for evaluating CT in learning and teaching environments (Forehand, 2005).

The actual Bloom's Taxonomy is hierarchical and was founded on six levels of cognitive abilities : Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation (Bloom et al., 1956). The cognitive domains mentioned in the taxonomy are believed to represent the basic elements of critical thinking. However, according to Ennis, Fisher and Kennedy (1991), only the last three levels of taxonomy per se (analysis, synthesis and evaluation) depict CT.

Notwithstanding its well-known place in education, taxonomy for learning has been criticized because of its one-before-the-other learning order and shattered by studies that demonstrate this is not the way students learn most efficiently (Trilling & Fadel, 2009). In 2001, the original taxonomy was modified to address present understanding of education and cognitive development and to make the original taxonomy more relevant to the 21st century (Krathwohl, 2002). The nouns in the original taxonomy were transferred to verbs to accentuate the actions involved in the thinking process, thereby, knowledge became 'remember', comprehension became 'understand', application became 'apply', analysis became 'analyze', synthesis became 'create', and finally evaluation became 'evaluate'. In contrast to the early form of taxonomy's linear order, the authors indicated that processes in Revised Bloom's Taxonomy can be acquired at the same time or in reverse order (Anderson & Krathwohl, 2001). Moreover, research has found out that fusing many of the mentioned thinking abilities enhances learning outcome (Trilling & Fadel, 2009). Based on RBT, Westbrook and Baker (2017) make a distinction between categories 'Higher-Order Thinking Skills' and 'Lower-Order Thinking Skills'. The first group in the RBT – remember, understand ,apply- get into the scope of Lower-Order Thinking Skills whereas the last group –analyze, evaluate and create- are regarded as Higher-Order Thinking Skills. These mentioned skills, especially the Higher-Order Thinking, are esteemed for their contribution to success in life because these skills demand learners to deduce knowledge from obtained data and make sensible judgements and release insightful presentations (Westbrook & Baker, 2017).

Another chief contribution to CT was made by Facione (1990) with many academics who gathered to define and categorize the components of CT. According to

these experts, CT is purposeful, self-regulatory judgement that lead to interpretation, analysis, evaluation, and inference, in addition to explanation of evidential, conceptual, methodological, criteriological, or contextual deliberation on which that judgement is grounded.

**Figure 2.**

*Critical Thinking (Facione, 2015, p.5)*




These experts also reached consensus on dispositional components of CT that an ideal critical thinker must have. Mentioned characteristics of the ideal critical thinker is presented in Figure 3.

**Figure 3.**

*Characteristics of An Ideal Critical Thinker (Facione, 201, p.12)*




Another approach to CT comes from P21. According to the P21 framework, CT is interwoven with problem solving and to this framework, CT entails approaching problems in a new way, linking learning across subjects or fields (P21, 2015, p.1). As stated by P21, in terms of CT, students should be able to reason effectively (deductively or inductively), use system thinking, make judgements and decisions and solve problems P21, 2015). P21 (2011) contended that CT and problem solving are the sine qua non among the core skills of 21st century since they make a distinction between learners who are prepared for progressively complex life and work surroundings in the 21st century and those who are not.

In addition to the current discussions on CT, Ventura et al. (2017) presented one of the most current and comprehensive frameworks. They state that

> we view critical thinking as a set of skills that can be defined in a general way and that have broad applicability across multiple disciplines, but which rely on subject-specific knowledge, conventions, and tools- intrinsic to a particular domain and discipline- for their expression. (p.9).

Venura et al. (2017) also proclaim the four dimensions of CT and they are as follows:

1. System analysis which comprises distinguishing and identifying the link between variables to comprehend a system,

2. Argument analysis which means deducing sensible conclusions based on evidence.

3. Creation which contains creation of an approach or theory based on a synthesis of evidence.

4. Evaluation which involves judgement of the quality of procedures or solutions.

Hixson et al. (2012) also proposed a comprehensive definition of CT based on the literature and their definition falls within the scope of this study. They stated that *"CT skills refer to students being able to analyze complex problems, investigate questions for which there are no clear-cut answers, evaluate different points of view or sources of information, and draw appropriate conclusions based on evidence and reasoning"* (p.8).

In the aforementioned paragraphs, it is highlighted that CT is an imperative skill in the world of work. However, benefits of CT are not limited to the business per se, CT has a pivotal position in education and social life. CT enhances individuals' quality of life and optimizes their possibility of happiness, prosperous living and personal satisfaction and furthermore, in accordance with its individual dimension, from constructive social behaviors, CT is a tool to develop people's self determination and make them engage in their community productively (Afana et al., 2019; Facione, 2015). Furthermore, CT improves the students' success in academic context and it has become a predictor of academic success (Petek, 2018; Rezaee & Mubarak, 2018). It was found that there is a positive correlation with students' reading comprehension and grades after employing CT skills (Facione, 2015). Since students think critically, they gain knowledge and benefit from their meta-cognitive skills across the limits of workforce and the academic context (Savin-Baden, 2000). CT also enhances learner autonomy, which is compatible with knowledge age's learning and teaching environment (Pemberton & Nix, 2012). With the latest findings and demands of the new era, the necessity to include CT as a higher order thinking skill in the curriculum is growing increasingly (Affana et al., 2019; Ennis, 2013).

CT is also presented as a pedagogical alternative to boost language learning and researches showed that there is a strong and positive relation between language learning and CT (Saleh, 2019). In the literature, it is argued that CT per se is a vehicle through which content is examined by applying CT skill and also a tool to apply students' language abilities to real-life situations and topics (Daniel, 2013). Today's globalized world of work demands employees who are at the superior level of foreign language. Superior level in English requires the combination of linguistics and cognitive skills and this could be achieved through integrating CT into the language classrooms (Daniel, 2013). Because of the lifelong side of CT and its teachability, it is mandatory that all students be taught as early as possible since empirical researches suggest that human beings begin developing CT skill at a young age (Afana et al., 2019). As opposed to common belief, it is possible to focus on superior level cognitive skills early through adjusting language, the type of the text and accuracy demanded from students (Daniel, 2013).

Thanks to its myriad benefits and compulsory place in the knowledge age, the new english language curriculum released by MoNE explicitly refers to the development and demonstration of CT skills in language classes (MoNE, 2013). However, it is obvious that there is a scarcity in studies researching the current position of CT in language classrooms of secondary school and whether teachers include it or not. This study aims at unveiling to what extent secondary school English language teachers include critical thinking skills in their classes.

### 2.2.2. Collaboration

Collaboration is among 21st century skills and is one of the most valuable skills with numerous benefits in the workplace, in the daily life of individuals and in society. In spite of its popularity derived from its various benefit in this age, collaboration is not a new concept for human beings. It is a proven fact that dissemination of human knowledge has occurred through collaborative interactions throughout history (Bradley, Lindstrom, & Rystedt, 2010). Silva (2009) is also in the opinion that collaboration is not a new skill,

however, today's world demands individuals to use their collaboration skills more actively and it is not enough to know something without applying it effectively.

With the rapid rise of technology and globalization, the world has become a small village, as a result, 21st century workers across the world have started managing the tasks collaboratively to achieve a common goal in a virtual setting (Dede, 2010; Jerald, 2009; National Education Association, 2012). In this regard, people's way of working has changed chiefly and thus, employers have sought the employees who are flexible, can collaborate respectfully in diverse teams, take responsibility, and have interpersonal skills (Afana et al., 2019; Jerald, 2009; Lai, DiCerbo, & Foltz, 2017; Sparks, 2017;Trilling & Fadel, 2009). For instance, research conducted by the National Association of Colleges and Employers (2016) showed that 80 percent of administrators indicated they were looking for evidence of whether the applicant could work collaboratively. 94 percent of employers surveyed in Met Life Survey of the American Teacher described working in teams as very important or absolutely necessary (Markow & Pieters, 2011). In a similar vein, upon asking which skills are the most important to graduates new to the workforce, employers rank collaboration second after professionalism, and third when asked which skills they expect to be more salient over the next five years (Jerald, 2009). With its changing structure, the world of work now embraces self-managing teams more often than ever.

The amount of self-managing teams that work collaboratively on specified projects increased from 28 percent in 1988 to 65 percent in 2005 (Jerald, 2009). It has been determined that individuals need to gain some characteristics in order to work collaboratively in these self-managing teams. According to Stevens and Champioan (1994, as cited in Lai et al., 2017), people must have two important skills to work efficiently in teams; interpersonal and self-management skills. Interpersonal skills contain conflict resolution, collaborative problem solving and communication, on the other hand, self-management skills include goal-setting and performance management, planning and task coordination. Addition to what Stevens and Champion put forward, individuals who will work in self-managing teams are expected to have some collaboration knowledge

and skills such as *"conflict resolution goal setting, performance management and planning and task coordination and to have global literacy for the globalized nature of collaboration in the 21st century"* (Jerald, 2009, p.48; Lai et al., 2017, p.5). Based on its prominent place, some companies hire occupational psychologists for support to test their employers' aforementioned skills (Binkley et al., 2010).

Not only do managers or employers benefit from collaboration, employees also have more job satisfaction when they are involved in collaborative tasks (Morel, 2014). It has been revealed that the ones that have more advanced collaboration skills earn more acknowledgement from colleagues and executives (Lai et al., 2017).

It has been emphasized in the previous paragraphs that collaboration is important in the business world. However, it is not only the business world that benefits from collaboration. Collaboration in many areas of human life provides numerous benefits. Some of these benefits are listed below:

- Multifaceted problems of the world could be overcome through CO (Afana et al., 2019; Bialik & Fadel, 2015; UNESCO Institute for Statistics, 2010).
- Advanced collaboration skills of the individuals in the society boosts civic discourse and vigorous democracy (Lai et al., 2017).
- Working collaboratively in teams increases one's emotional development, self-efficacy, and self-esteem, as well as increasing respect for diverse groups in society (Afana et al., 2019; Donato, 2004; Morel, 2014).
- Collaboration also contributes to individuals' creativity and critical thinking skills and improves metacognition positively (Afana et al., 2019; Binkley et al., 2010; Lai, 2011; Morel, 2014).
- Collaborative work across multidisciplinary subjects leads technology advances (Bialik & Fadel, 2015).
- Collaboration in people's social daily life brings happiness (Trilling & Fadel, 2009).
- Collaboration in a society avoids emerging of marginalized groups (Donato, 2004).

- According to the author James Surowiecki, under appropriate situation, , wisdom of crowd brings forth more intelligence, remarkable estimations and better decision, and as a result, new knowledge is added to the society (Donato, 2004).

Although it has an inclusive dominance in the economic welfare of countries, it has been determined that there is not enough emphasis on collaboration skills in educational environments and as a result, employers are not satisfied with graduates in terms of collaboration skills (Sparks, 2017). Before discussing the status of collaboration skills in education, it is necessary to know what collaboration is.

In the literature, some of the scholars and researchers put forth that collaboration is a way of achieving a common goal or solving a problem. For instance, Cook and Friend (1995) defined collaboration as a way of interaction between at least two equal parties willingly involved in the process of decision-making while they work to achieve a common goal. Similarly, Roschelle and Teasley –the owner of the most cited definition of collaboration- (1995, as cited in Lai, 2011), postulated that collaboration is *"coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem" (*p.70). In line with this, Bialik and Fadel (2015) say that collaboration is the coming together of diverse people to achieve a common goal. On the other hand, Barfield (2016) argues that collaboration includes decisions taken jointly to achieve a goal that the individual achieves on her own, and the joint distribution of responsibilities and labor. In contrast to these definitions, Hughes and Jones (2011) give more importance to how people interact with each other in the team rather than achieving a common goal or negotiating on a shared problem per se.

For some scholars, people collaborate to create new knowledge. Peters and Armstrong (1998, as cited in Kane and Harms, 2005) designate collaboration as individuals working together to create knowledge that was not in existence before the collaboration happened. In this perspective, the entirety is more significant than the sum of its separate parts. Within groups, there are personal and group contributions, hence, individuals learn and develop in a collaborative environment. This side of collaboration

was articulated by Vygotsky. According to Vygotsky (1978, as cited in Barfield, 2016) collaborative learning happens through social interaction, communication exchange, joint decision-making with others and consequently, these collective continuum contribute markedly to personal and group growth and people involved in this process co-construct the knowledge and perception.

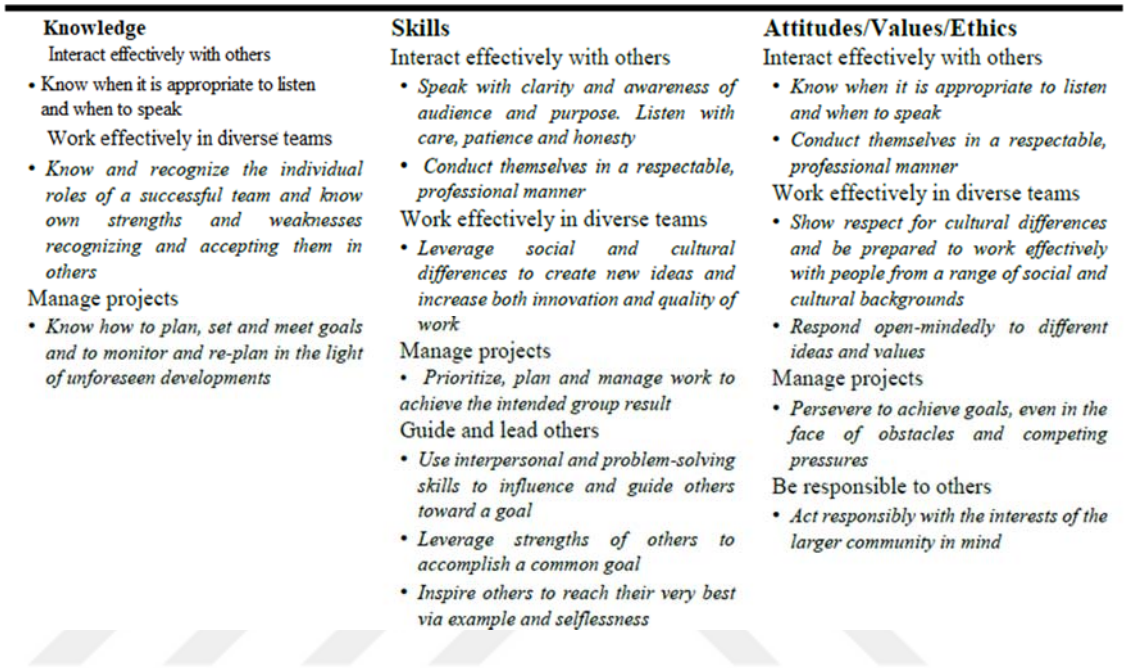
Whether it is to create knowledge or to serve a common purpose, there are certain characteristics that individuals must possess in collaborative work. P21 (2015) indicates some of these characteristics in its framework. According to P21, within a successful collaboration setting, individuals must;

- be capable of laboring effectively and respectively with diverse teams
- exercise flexibility and be eager to be helpful in making necessary compromises to achieve a joint goal
- take shared responsibility for collaborative work and appreciate the individual contribution made by team members.

P21 framework accentuates the process of collaboration works rather than the output of it and also gives great importance to work in diverse teams. Based on P21 framework, Binkley et al. (2010) prepared operational definitions of collaboration skill on their ATCS21 (Assessment and Teaching of 21st Century Skills) report as presented in the figure 4. The aim of ATCS21 is to provide operational definitions of 21st century skills to assess them properly and make them more integrated into the teaching and learning environment. There are four domains in KSAVE Framework, they are; Knowledge, Skill, Value. Collaboration has some subskills to perform to collaborate effectively.

***Figure 4.***

*KSAVE Framework for Collaboration ( Binkley et al.2010, p.23)*



| **Knowledge** | **Skills** | **Attitudes/Values/Ethics** |
|---|---|---|
| Interact effectively with others<br>• Know when it is appropriate to listen and when to speak<br>Work effectively in diverse teams<br>• *Know and recognize the individual roles of a successful team and know own strengths and weaknesses recognizing and accepting them in others*<br>Manage projects<br>• *Know how to plan, set and meet goals and to monitor and re-plan in the light of unforeseen developments* | Interact effectively with others<br>• *Speak with clarity and awareness of audience and purpose. Listen with care, patience and honesty*<br>• *Conduct themselves in a respectable, professional manner*<br>Work effectively in diverse teams<br>• *Leverage social and cultural differences to create new ideas and increase both innovation and quality of work*<br>Manage projects<br>• *Prioritize, plan and manage work to achieve the intended group result*<br>Guide and lead others<br>• *Use interpersonal and problem-solving skills to influence and guide others toward a goal*<br>• *Leverage strengths of others to accomplish a common goal*<br>• *Inspire others to reach their very best via example and selflessness* | Interact effectively with others<br>• *Know when it is appropriate to listen and when to speak*<br>• *Conduct themselves in a respectable, professional manner*<br>Work effectively in diverse teams<br>• *Show respect for cultural differences and be prepared to work effectively with people from a range of social and cultural backgrounds*<br>• *Respond open-mindedly to different ideas and values*<br>Manage projects<br>• *Persevere to achieve goals, even in the face of obstacles and competing pressures*<br>Be responsible to others<br>• *Act responsibly with the interests of the larger community in mind* |

Another framework that describes the subskills of collaboration comes from Cambridge Framework for Life Competencies in Education (2018). According to this frame work, collaboration includes;

- taking turns in shared activities
- listening to and respecting others' contributions
- sharing ideas
- taking personal for own contributions to a group task
- managing the sharing of tasks in a project
- evaluating and responding constructively to others' contributions

Hixson et al. (2012) define collaboration skills based on the frameworks above and others. According to them, *"collaboration refers to students being able to work together to solve problems or answer questions, to work effectively and respectfully in*

*teams to accomplish a common goal and to assume shared responsibility for completing a task"* (p.8). This study is based on this definition to evaluate teachers' practices of collaboration skills.

It is the responsibility of education to equip the current generation with collaboration skills to create a well-functioning society and sustain economic prosperity. In addition, the use of collaboration in the context of learning has valuable contributions for students. For instance, students who are in a collaborative learning environment have better academic success, their attitudes towards school, subject, teacher and classmates become more positive and more motivated, and these students become more autonomous in obtaining necessary information (Bialik & Fadel, 2015; Burke, 2011; Chen, 2018; Kane & Harms, 2005; Lai et al., 2017; Lai, 2011; Wasley, 2006). Further, low-level students increase their understanding and perform better in teams (Lai, 2011; Styron, 2014). As a result of employing collaboration skills in class, schools will embrace more active learning in which students take the responsibility of their own learning (Burke, 2011). On the teachers' side, collaboration eases the burden on teachers of managing impulsive children because these children try to act less impulsive (Afana et al., 2019). However, it is known that most of the time, schools fail to practice collaboration skills and students work on their own in a traditional educational climate, which is not a desirable outcome for the 21st century teaching and learning environment.

Collaboration skills cannot be acquired without explicit teaching (Plucker, Kennedy, Dilley, n.d., as cited in Akçay, 2019). It is a notable fact that dividing students merely into groups does not mean collaboration (Styron, 2014), hence, it is advised that collaboration skills must be taught explicitly and it works best when employed as an end rather than a tool for a course content (Lai, 2011; Sparks, 2017). While teaching collaboration skills, another issue that needs to be addressed is assigning roles to students for effective collaboration and avoiding social loafing (Burke, 2011; Lai et al., 2017). These roles could be time keeper, materials manager, problem resolver, voice checker, source searcher, moderator, summarizer, and starter (Jones, 2015; Lai et al., 2017). Another important part of collaboration in the teaching and learning environment is to

create heterogeneous groups of students from different levels, and if possible, keep the groups small and equal in number of boys and girls ( Lai, 2011).

With the advent of ICT, people transfer information and collaborate across the world - mostly over the internet- and English is a common language among these people, therefore, teaching English has gained more recognition than ever (Bradley et al., 2010). Collaboration skills were incorporated into English language teaching, along with constructivism and social learning theory (Bradley et al., 2010). In constructivism, students build their own knowledge through an active cognitive process of development and this type of learning best happens when students collaboratively and vigorously engage in the learning process rather than working on their own, as social learning theorists point out (Ike-Nwafor, 2020). In this learning environment that requires collaborative work, student participation, which is important for foreign language teaching, is essential (Chen, 2018). As a consequence of the activities that require collaboration, students improve their language skills and their attitudes towards language learning change positively. For instance, the study conducted by Chen (2018) showed that college students who try to create their own wikis to improve their English writing skills become more enthusiastic to learn English, improve their writing skills, and enjoy collaborative work in wiki-mediated environments. The result also showed that collaborative work contributed to students' language development and social interaction. Another study conducted by Anwar (2020) in the EFL setting showed that after employing Collaborative Strategic Reading, students' reading skills reached 100 percent, pre-study reading skills of the students were 50 percent, and student engagement also increased. Based on these findings and more, it is understood that collaborative language teaching is a way to promote second language learners' academic achievement, problem solving skills as well as positive attitude toward language learning (Chen, 2018). Using collaborative skills in a collaborative language teaching environment, students engage in authentic and realistic tasks that require them to experience real-life applications, a desirable goal in language teaching (Atai, 2006).

Despite the central and inclusive place of collaboration in the language teaching environment, the studies have focused more on the high school and university classrooms so far (Lai et al., 2017), so more studies are needed to elucidate the current status of EFL classrooms in secondary schools, in terms of teaching collaboration. One of the aims of this study is to realize this mission.

### 2.2.3. Communication

Almost every human action involves some form of communication (both direct and indirect) within itself, and the way each person communicates has an impact in one way or another on personal and organizational effectiveness (Lunenburg, 2010). From Aristotle to modern institutions, communication has been variously defined and subdivided into its components due to its impact at the personal and organizational level.

Dating back to the fourth century BC, the basic form of communication was put forth by Aristotle. In The Art of Rhetoric, he argued that the main purpose of communication is persuasion (Metusalem, Belenky, & DiCerbo, 2017). There are 3 elements in his basic model; speaker, message, and listener (Croft, 2004). The main purpose of the speaker is to persuade the listener by displaying knowledge and pure intent, and for the purpose of persuasion, the speaker must also manipulate the feelings of the listeners and present reasonable arguments (Metusalem, Belenky & Dicerbo, 2017).

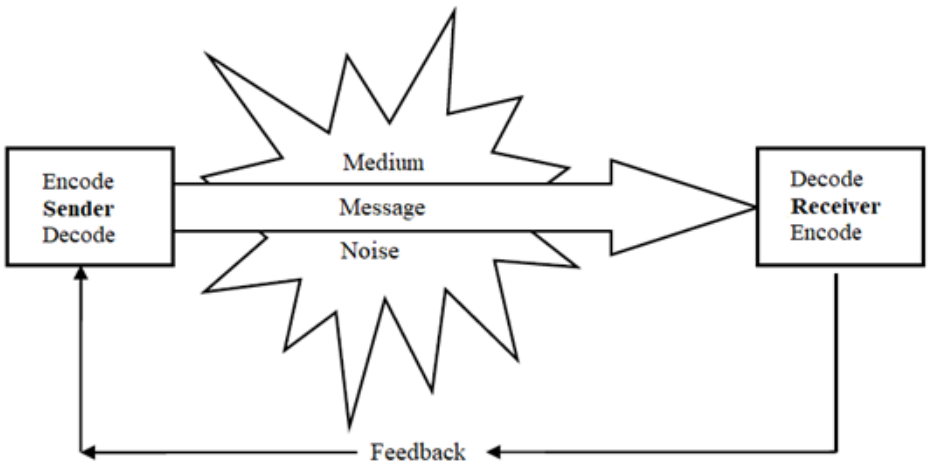
In the 20th century, Laswell in 1948 (as cited in Croft, 2004) posed a question: *"Who says what, on what channel, with what effect?"* (p.117). His model includes the communicator, message, medium, and audience, and there are some factors in this model that can affect the effectiveness of communication. These factors vary depending on the medium the communicator uses. After Laswell, in 1949 Schanon and Weaver introduced a more understandable and remarkable model of communication. As cited in Metusalem, Belenky and Dicerbo (2017), there are six elements within this model: Source as a sender of the message, Transmitter as a translator of the message into a signal, Signal as a physical output of the transmitter, Channel as a medium through which the signal travels,

Receiver as an apparatus that translates the signal back into a message, Destination as an interpreter of the message-listener, Noise as an undesired changes to the signal such as loud coughing and all these components affect the quality of communication. As Weaver and Shannon pointed out, conveying meaning from a message is an important point, and it depends on the sender's preparation of the message and the receiver's ability to interpret it as implied (Metusalem et al., 2017). As a new breath to this components of communication, Schramm (1954) addressed communication as a new area and invented various models for some kind of demands. The most important contribution of Wilbur Schramm is to present the term *field of experience* of the sender and receiver. It is an important element of communication process for the quality of communication. The sender deciphers the message based on the senders' field of experience, such as his major, culture, and language. The user's field of experience leads to deciphering. There must be commonality in their field of experience between the sender and receiver so that communication occurs as intended (Croft, 2004). In this model, communication is a reciprocal process as the receiver gives feedback to the sender. After Schramm, Berlo (1960) also indicated the role of human intervention to the communication process and he contemplated that the way people communicate, their cultural and social background, their existing knowledge, attitudes have an impact on the effectiveness of communication and all these components should be handled properly.

So far, the components of communication rather than the definition have been presented. Although it is difficult to give a single definition due to the multifaceted nature of communication, there are scholars who have defined communication since the nineteenth and twentieth centuries. For instance, Dale (1969 as cited in Croft, 2004) defines communication as "*sharing of ideas and feelings in a mood of mutuality*" (p.1). On the other hand, Berelson and Steiner (1964) depicts communication as *"the transmission of information, ideas, emotions and skills... by the use of symbols"* (p.1). Likewise, Keyton (2010) defines communication as the process of transmitting information and mutual understanding from one person to another. The Figure 5 shows the process of communication.

**Figure 5.**

*The Communication Process (Lunenburg, 2010, p.2)*




The figure shows that the sender initiates communication by encrypting the message with symbols or words. The message is delivered via a medium (telephone call or face to face conversation). The receiver elucidates the message as a sensible information. In this process, noise is anything that ruins the communication and it could be language or social barrier. In the end, the receiver gives feedback to the sender's message. Any challenges in this process can distort the effectiveness of communication (Keyton, 2010).

In the light of these definitions, some roles have been imposed on both the sender and the receiver due to its two-way structure of communication. Lunenburg (2010) and Metusalem et al. (2017) presented some principles for the sender and the receiver for successful communication. The responsibilities of sender are as follows:

- Making a clear outcome of the intended message before communication.
- Clarifying the message based on pragmatism, context and appropriate word choice.
- Adjusting the message according to the receiver's field of experience.
- Taking into consideration the conventions (academic context or business setting).

- Taking into consideration of the receiver's cultural and social background.
- Choosing the most appropriate medium ( face-to face or e-mail).

Apart from the sender's responsibilities, there are also some points for the receivers. One of them is active listening. The receiver is required to be aware of the sender's verbal output and emotions in order to understand the whole meaning of the message by paraphrasing the sender's message, paying attention to the content and the feeling of the message, holding back judgements and reflecting (Lunenburg, 2010; Metusalem et al., 2017)

Although effective communication has been seen as a means of success in business life and happiness in private life of people from all walks of life for years, with the development of information and digital technology, new media and globalization, the way people communicate has changed and become more complex, and therefore in the 21st century, having communication skills has become more prominent and important than in the previous century (Afana et al., 2019; National Education Association, 2012; Di Lucia, 2020; Kivunja, 2015a; Metusalem et al., 2017). While the main focus in the industrial age was accuracy in reading and fluency in speaking, the 21st century demands that the current generation has more intelligible and deeper communication skills (Kivunja, 2015a). Communication skills have become an integral part of the expanding service economy, as an estimated 81 percent of jobs depend on these skills (National Education Association, 2012). A recent study showed that managers rate communication skills as the most valuable skill for an ideal employee (Yate, 2009). Levy and Murnane (2004) also stated that complex communication involving negotiation, explanation and other structures of human interaction cannot be automated and the business world needs job candidates with these skills.

In addition to employability, strong communication skills have an impact on one's personal happiness, self-worth, self-efficacy, self-actualization and academic success (Afana et al., 2019). Due to the benefits it provides in all areas of life, new

frameworks have emerged to adapt communication to the 21st Century. One of them is P21, according to P21 (2019), communication includes:

- Expressing thoughts and ideas efficiently by employing oral, written, and nonverbal communication skills in a variety of forms and contexts.
- Listening efficiently to decode meaning, involving attitudes, knowledge, intentions and values.
- Using communication for various purposes.
- Availing multiple media and technologies by choosing the most appropriate one.
- Communicating effectively in diverse cultural areas (including multi-lingua).

Taking into account the above elements, P21 (2017) also stated that communication includes an intended purpose and the communication process is influenced by the receivers' emotions and context. Another 21st century definition comes from Hixson et al. (2012). They stated that *"communication skills refer to students being able to organize their thoughts, data and findings and share these effectively through a variety of media, as well as orally and in writing"* (p.8). This definition is the basis of this research in measuring the use of communication skills by English language teachers.

Although communication skills stand out as important skills, employers state that job candidates lack these skills and new graduates are not adequately taught communication skills due to the dominance of didactic teaching (Afana et al., 2019).

Innovations in technology and media have changed the way people communicate, and these changes have necessitated some innovations in the school environment, because students cannot learn effective communication on their own unless communication is clearly taught (Metusalem et al., 2017). In the 21st century, educators are faced with the task of preparing learners for a new era filled with technological advances that affect the way people communicate (Di Lucia, 2020). In this respect, it is recommended that educators teach communication skills clearly, and when they teach

these skills, they should benefit from role-playing activities and use peer assessment and self-assessment for assessment (Metusalem et al., 2017).

Teaching communication is also at the heart of English language teaching. English is an international language for global communication, and an increasing number of people in the business world are expected to have a good command of English to communicate with people from all over the world (Warschauer, 2000). In language teaching, it is important to have communicative competence in which interlucators use appropriate language in a given situation, and in this regard, learners of English must gain intercultural awareness to accomplish a successful communication in the world of work as well as their personal lives (Makhmudov, 2020). The vital role of communication in this era gives an important role to English language teachers, so the Higher Education Council of Turkey has added a course called Effective Communication Skills to the curriculum of prospective English teachers (Akpınar, 2009). However, there are few studies on to what extent English language teachers who teach at secondary schools use communication skills in their classrooms. Within the scope of this study, the communication practices of secondary school English teachers were discussed.

### 2.2.4. Creativity and Innovation

From the ancient Greek philosophers to the present day, creativity has preserved its valuable position in human history (Lai, Yarbro, DiCerbo, & de Geest, 2018). Creativity has been seen as an important fuel for human beings because without creativity there is no progress and people become stagnant and repeat the same patterns all their lives (De Bono, 1995). Due to its important place in human life, many associations have been made about creativity throughout history. In the 19th century and in the first studies in the field of creativity, it was mostly associated with fine arts and artists (Akyildiz & Çelik, 2020; Lai et al., 2018). However, creativity covers many areas of life and is not subject-specific (Afana et al., 2019; Ferrari, Cachia, & Punie, 2009; Lai et al., 2018). Because of their versatile use in various areas of life, it is not easy to define creativity and innovation in a narrow spectrum.

Innovation and creativity are two complementary and inseparable terms (Ferrari et al., 2009). Innovation has been termed as the application of a novel and enhanced product or process and it is more associated with the implementation of a creative idea within a business context (Ferrari et al., 2009; Lai et al., 2018). Creativity is a prerequisite for innovation (Afana et al., 2019), so understanding creativity is more important.

Creativity is often associated with novelty and usefulness, emphasizing that creativity becomes redundant without its value and contribution to a particular area of life (Ferrari et al., 2009; Sternberg, 2006). In accordance with this perspective, one of the forerunners in the field, Stein (1953) depicted creativity as *"a novelwork that is accepted as tenable or useful or satisfying by a group at some point in time"* (p.311). On the other hand, Amabile (1988) also described creativity as an output of unique and fruitful ideas by a person or a team.

Another association with creativity is seeing things in an unconventional way. For instance, Craft (2005) described creativity as the capability to approach and see possibilities that other individuals have not discerned. In addition to definitions, some scholars and researchers conceptualized creativity and presented its subcomponents. The following paragraphs mention these attempts.

Rhodes (1961), one of the pioneers in the field in the 20$^{th}$ century, defined creativity as *"the process of reorganizing knowledge ( general or specific knowledge), and of articulating that synthesis so that other people can understand the meaning"* (p. 305). He further put forth four P's of creativity; person, process, press and product. The first pillar -Person- encloses information about intelligence, personality, disposition, attitudes, value systems and habits that are unique to each individual. The second pillar – Process- is the actions taken during creative performance. It is more related to motivation, perception, learning, thinking and communicating (Rhodes, 1961). The third pillar – Press- refers to the interaction between individuals and their ecological surroundings. School is an important ecological surrounding, especially for children. Studies prove this fact and have shown that teaching approaches, non-threatening classroom environment,

peer relationships, collaboration, competition, resources and technologies affect students' creativity (Guo & Woulfin, 2016). The last pillar is Product. It refers to the final product of the process, not only limited to tangible outputs, but also consists of ideas that have the potential to be transformed into tangible products. For example, the idea of a new car reflects certain thoughts of the inventor that could be a product even when the car was not manufactured (Guo & Woulfin, 2016).

In the 21st century, Rhodes' four P's approach was developed by Glăveanu (2013). Glăveanu (2013) -through the lenses of social perspective- presented five A models to creativity; actor, action, artifact, audience and affordances. Actor corresponds to 'person' but Glăveanu accentuates the social side of individuals engaged in creative performance. Action equals 'process', it differs in that Glăveanu dwells on the coordinated psychological and behavioral manifestation of creative process. Artifact is similar to the 'product', where Glăveanu places more emphasis on the cultural context of the product and considers that the product is not a separate process part and cultural setting. Press is divided into audience and affordances. Audience represents the social facet of the environment, whilst affordances represent material facets of the environment. In teaching and learning context, audience refers to teachers' and peers' reviews and comments, and affordances refer to resources such as online databases, computers, and books (Guo & Woulfin, 2016)

After Rhodes four P and Glăvean's five A models, another most frequently cited and accepted concept in creativity studies is divergent thinking, which means generating countless answers and ideas for a single problem or topic rather than focusing on a single correct answer. Divergent thinking is divided into subcomponents by Torrance (1969). Sub-components of divergent thinking are fluency, flexibility, originality and elaboration. Fluency is about production of many ideas, flexibility is the ability to produce different ideational categories, originality is related to producing novel and unusual ideas and elaboration includes the persistence on providing details (Torrance, 1969). Based on divergent thinking and its subcomponents, Torrance created the Torrance Test of Creativity (TTCT), one of the best-known tests on creativity, with a psychometric

approach to creativity. According to his approach, creativity can be measured and divergent thinking is the indicator of creative potential (Lai et al., 2018). TTCT is such a decisive and reliable test that meta-analysis has revealed that divergent thinking tasks within the test foresees creativity more than IQ tests (Bialik & Fadel, 2015).

One of the most valuable approaches to creativity in education and other fields in the 21st century is the investment theory proposed by Sternberg (2006). According to this theory, creative people are those who 'buy low and sell high' in a plethora of ideas. Buying low denotes embracing ideas that are not known or out of interest but have a hidden potential. Creative people contribute some to this idea and try to convince other people of its value. Grounded on this idea, Sternberg also stated that six different but related systems influence creativity, namely intellectual abilities, knowledge, thinking styles, personality, motivation and environment. Intellectual abilities include approaching problems in new ways and avoiding conventional thinking, foreseeing which ideas are worth pursuing and the practical and contextual ability to apprehend to convince people about the value of ideas. Knowledge is another essential element for creativity and it's about knowing enough about a discipline to advance it. At this point, it is needed to know that too much knowledge could be an obstacle for creativity as individuals tend to overlook details during the creation process when they step out of their comfort zone (Sternberg, 2006). Styles of thinking contain some personal traits such as willingness to defeat barriers, willingness to take judicious risks, willingness to tolerate ambiguity and self-efficacy. This pillar of investment theory is similar to Rhodes's (1961) Person strand. Motivation is another concept that plays an important role and is mostly studied under two types; intrinsic and extrinsic motivation. Intrinsic type of motivation plays more pivotal role in creativity than extrinsic one because Amabile (1983, as cited in Sternberg, 2006) argues that individuals do not do creative work in an environment in which they do not truly love what they are doing and even extrinsic motives like rewards become useless to trigger creativity. Finally, environment is an essential issue in creativity and it is accentuated by many scholars and it resembles the press pillar of four P's of creativity by Rhodes and affordances of Glăveanu's five A model. People need an environment where creativity is valued and encouraged. Even if one has all the inherent personal

characteristics of creativity, one cannot truly do creative work without a supportive environment (Sternberg, 2006).

After Stenberg's investment theory, from a developmental perspective, Kaufman and Beghetto (2009) contributed to the philosophy of creativity and proposed four C model. This approach changed people's stereotypical belief that only outstanding artists and scientists were creative and that creativity popped up out of nowhere. In this approach to creativity, the first step of creativity is 'mini c' and it includes the creativity that exists in the learning process. It is portrayed as a new and individually relevant judgment of experiences, actions, and events. For example, a student who develops a strategy of adding two-digit numbers may not make any progress in mathematics, but creates a mini-c because the idea is unique to her and effective in solving problems (Lai et al., 2018). Little-c is more associated with daily activities in everyday settings such as the workplace, classrooms and schools, home and social settings (Kaufman & Beghetto, 2009). Pro-c- the next level of little-c- is associated with the professional acquisition approach of creativity. This level of creativity depicts creators who have expertise in their major and have the ability to create novel ideas and outputs that are appreciated in the field, such as winning career awards (Lai et al., 2018). The last pillar of creativity is Big-C and it refers to outstanding individuals who have made a breakthrough in a particular field, such as Einstein and Mozart. According to Kaufman and Beghetto, creativity is for everyone and takes time, as explained in mini and little-c, so creativity is more about process, which is something every teacher should keep in mind.

Creativity and innovation are highly demanded skills in all walks of life in the 21st century and have been on the top of the list of 21st century skills (Trilling & Fadel, 2009). One of the reasons that make these skills essential is the global economy. Global market demands employees to create new utility and upgraded products (Trilling & Fadel, 2009) while also actively engaging in complex and evolving technological and digital environments (Afana et al., 2019). Creativity and innovation skills are also important for leaders. Research conducted by IBM Institute for Business Value in 2010 (as cited in Bialik & Fadel, 2015) showed that 15,000 CEOs from 60 countries and 33 different

industries identified creativity as the most important leadership trait to tackle the growing world of confusion and uncertainty. Based on the findings, Trilling and Fadel (2009) stated that the information age has suddenly been replaced by the innovation age due to the intense need for innovation and creativity in all areas of life, from solving complex problems to the invention of new technologies. In addition to Trilling and Fadel, author Richard Florida (as cited in NEA, 2012) also called this age the creative age because creativity and innovation have become the main drivers in today's business world, and the innovation age economy is driven by human creativity. As a result of the creative and innovation age, creativity and innovation skills in recruitment have started to be among the most basic life skills and these skills have become an indispensable part of professional success (Afana et al., 2019; Kivunja, 2015a), because an employee's creativity paves the way for organizational innovation (Amabile, 1988). Based on this information, it can be easily said that the number of creative employees in a country determines the future prosperity of the economy and the position of that country in the global and local market due to the change in the world of work (Ferrari et al., 2009).

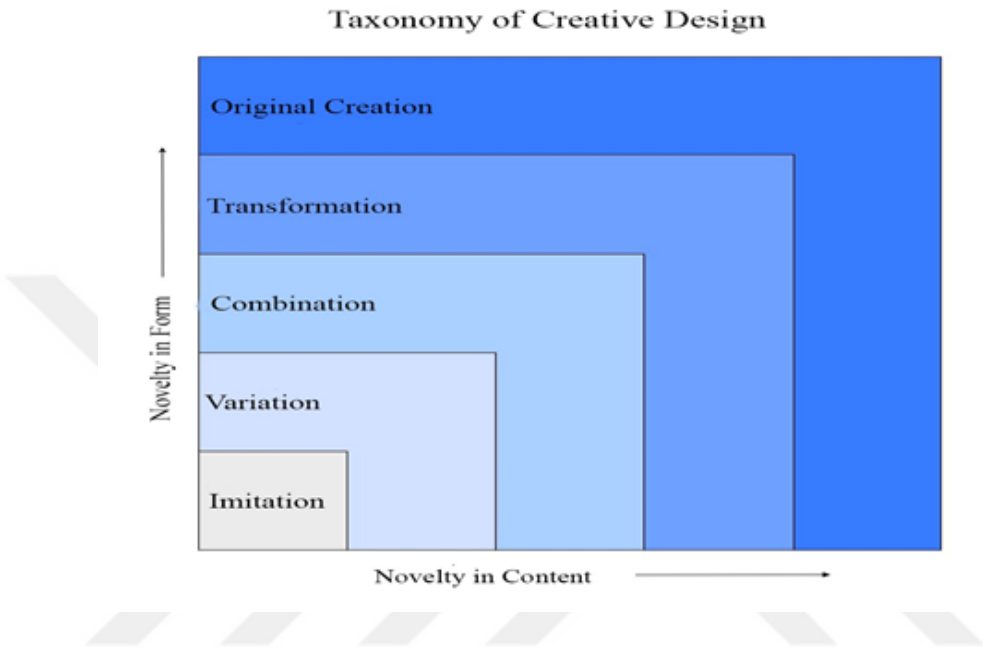
Besides economic prosperity and competitiveness, creative and innovative minds are needed for the solution of the world's current and future problems, and these minds have the potential to provide novel materials for current problems (Afana et al., 2019; Lai et al., 2018; Trilling & Fadel, 2009). It is known that human beings are faced with environmental (e.g. climate change), economic, and social problems. The current generation has the potential to find solutions to these problems as long as they are creative. For example, the creative minds of the 21st century can generate green energy use for climate change, invent new technologies such as bio-nano technology and advanced versions of existing technology such as efficient and accessible electric vehicles, or even create new branches of knowledge (Trilling & Fadel, 2009). In addition to finding solutions to complex problems, creative individuals are adapt at tackling daily life problems and these people adapt resiliently to life's challenges (Afana et al., 2019).On the other hand, in the personal dimension of creativity, in addition to having a fulfilling life, creative people promote self-worth, self-esteem, which in turn leads to self-efficacy (Afana et al., 2019; Sternberg, 2006).

In response to its decisive position in today's world, countries have begun to give a central focus to reshaping education around creativity, and traditional education has begun to give way to creative one (Guo & Woulfin, 2016; Trilling & Fadel, 2009). In parallel with this, the European Union declared 2009 as the European Year of Creativity and Innovation and started to give conferences and allocate a budget for related teacher training (Bialik & Fadel, 2015). In Asia, Japan began promoting educational and economic reforms to encourage more creative education (McCreedy, 2004, as cited in Bialik and Fadel, 2015). In Turkey, the Turkish Ministry of Education has published the Turkish Education Vision 2023 report, in which creativity is mentioned only once in the English language teaching curriculum, without giving details and operational definitions (Akyildiz & Çelik, 2020). It is a well-known fact that education is what prepares young people for the changing world and equips them with creativity and innovation skills.

It is a fact expressed by academics working on creativity in the field of education that creativity and innovation skills can be developed, taught and improved like other school subjects (Afana et al., 2019; Ferrari et al., 2009; Kurt & Önalan, 2018; Lai et al., 2018; Sternberg, 2006; Trilling & Fadel, 2009). In the field of education, it should be known that as Kaufman and Beghetto (2009) and other scholars mentioned above remarked, creativity is more to do with process and there are some stages going through. Likewise, Nilsson (2011) stated that creativity is process-oriented and hierarchical at one point. He envisioned the Taxonomy of Creative Design and became a route for school settings as well.

**Figure 6.**

*Taxonomy of Creative Design (Nilsson, 2011, p.59)*




In this taxonomy, the level of imitation comprises reproduction of an existing material and paves the way to a more creative work. For example, learners memorize a part of a play in literature and act it out (Bialik & Fadel, 2015). At the variation level, the creator only makes some changes to the original material, provided the content and form remain the same. Here students can rewrite part of the text without changing the grammatical structure (Bialik & Fadel, 2015). Combination level contains melting two or more works in the same pot and creating something new. Transformation level consists of converting a work from one mode into another. Finally, original creation represents bringing out something unique and unrecognizable. Learners' original short story can be an example of this kind of creativity. By following these steps, teachers can improve learners' creativity incrementally.

Another prominent point in adapting creativity to the school environment is the activities. One of the most beneficial activities is real world problem solving tasks because they help students improve their creative thinking (Bialik & Fadel, 2015; Trilling

& Fadel, 2009). Meta analysis of studies in which creativity is given as an intervention showed that creativity-training programs become more fruitful when they involve creative problem-solving tasks and structured instruction (Lai et al., 2018). In addition to the activities, it is also important that the teaching environment and teachers are creativity-friendly. The mentioned teaching environments are expected to have adjustable and flexible use of space and time, to have access to appropriate resources, to have a place to work outside of school, to adopt a game-based approach that allows learner autonomy, to have thoughtful relationships between learner and educator, and to spare time for peers (Davies et al. 2013). The quality of teachers is another factor affecting creativity. Moultrie and Young (2009) came up with six qualities of creative teachers and they are analytical problem solvers, free to organize their lessons, support students' ideas, create a safe environment, witty and logical risk takers. Creative teachers correspond to effective teachers, therefore, it is important to provide training and institutional support to teachers (Ferrari et al., 2009). Once these conditions are set, students' creativity is expected to rise, and this also affects their academic success (Afana et al., 2019). Within creative teaching settings, students' choices and voices are heard, students become more active which makes learning more meaningful and relevant (Ferrari et al., 2009).

Creativity also plays an important role in language learning, because the language learning process inherently involves imagination and creativity (Chomsky, 2009). For instance, when speaking in a foreign language, speakers play with language creatively by reformulating sentences, changing structures or expressing content creatively (Akyildiz & Çelik, 2020).

Because of its central role in the 21st century, creativity has started to attract more attention in ELT (Kurt & Önalan, 2018). In response to this attention, the framework of Cambridge life competencies (2018) put forth some characteristics that each language learner must have. According to this framework, language learners are expected to participate in creative activities, create new content from their own ideas or other work, and explore and voice their personal identities and feelings through creative activities.

Adopting creativity in language classes has some benefits such as increased motivation and academic success in English (Liao et al., 2018). Research carried out in the second language writing course by Arshavskaya (2015) has shown that the use of creative writing tasks increases learner motivation and engagement and improves English writing skills while also providing room for a non-threatening environment. In addition, in lessons where creativity is adopted, students feel more comfortable expressing their ideas.

Although it has been accepted and researched worldwide, there are few studies on creativity in the field of ELT (Akyildiz & Çelik, 2020; Kurt & Önalan, 2018), especially among secondary school English teachers in Turkey. One of the secondary aims of this research is to reveal how often English teachers working in secondary schools include creativity and innovation skills in their lessons.

### 2.2.5. Self-Direction

As a result of technological and other developments in the information age, what individuals learn at university is not enough and they need to acquire new skills on their own in the constantly changing world. This continuous radical changes in all areas of life necessitate individuals to be lifelong learners. Individuals need self-direction skills in order to become lifelong learners in both their personal and professional lives (Guglielmino, 2011).

Self-direction has easily taken its place among the concepts that are popular in the 21st century. Its popularity is due to economic reasons as well as personal well-being in the 21st century. In business and human resources it is utterly appreciated that in today's competitive global business world, companies fail to teach their employees everything they need to learn to keep their organizations productive (Friedman, 2006), hence, employees are expected to acquire some skills and information on their own, which requires self-direction skills. Confirming this fact, several studies have revealed a positive correlation between self-direction skills and job performance. As a result of increased job performance, employees become more productive. This feature of employees with self-

direction skills also makes a significant contribution to the country's economy. For instance, the research conducted by Guglielmino (2011) unveiled that nations whose citizens have higher self-directed learning readiness possess much more productive economies and have higher per-capita income. Other studies also evinced that employees who have higher levels of internal focus of control, which is a subcomponent of self-direction, showed significant job commitment, benefitted more problem solving strategies and had higher levels of job performance and job satisfaction (Boyer, Edmondson, Artis, & Fleming, 2014). As can be seen from these studies and facts, to thrive in today's workforce, people are expected to assume their responsibility of learning, they need to plan, make progress, adapt and change in a digitized and globalized society, this means that self- direction is one of the key skills in the 21st century. In order to appreciate self-direction skills adequately in the field of education, it is necessary to know what it is and what its subcomponents are.

Although it has a positive direct impact on human life, to define self-direction is not easy because of its complexity and includes cognitive, internal and interpersonal sub-skills (Brandt, 2020). The skill of self-direction has been given great importance in the field of education, and therefore its definition comes mostly from scholars who are experts in the field of education. The concept of self-directed learning has an important place in the literature at the point of gaining self-direction skills. In this area, the most cited and well known definition belongs to Knowles (1975), who outlined five dimensions of self-directed learning. According to him, self-directed learning is a process *"in which individuals take initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes"* (p.18). Further, Malcolm Knowles (1975) postulated that SDL (Self-Directed Learning) is a process in which individuals govern their own learning process from outset to end. Brockett and Hiemstra (1991) also agreed that SDL happens on a continuum and they further accentuated the personal elements in the process in which learners assume the main responsibility for the learning experience. They developed the PRO (Personal Responsibility Orientation) Model for SDL. They emphasized that the

teaching process and learner characteristics affect SDL in the model. In the teaching-learning process, students take primary responsibility for planning, implementing and evaluating the learning process, with the teacher facilitating this process. These learning experiences of learners can be transferred to other conditions and learning situations. In the model, personal responsibility refers to students' ability or willingness to take control of their own learning, which governs their potential for self-direction (Brockett & Hiemstra, 1991). In line with Knowles, Brockett and Hiemstra, Grow (1991) places emphasis on the SDL process and personal responsibility, but argues that students cannot suddenly become self-directed and the teacher's role is important in students' self-direction. In addition, he indicated that there are four stages that learners go through. First, students are dependent, then, they are interested and afterwards, they are involved and they become self-directed, finally, they become self-determined learners. In Figure 7, Brandt's (2020) adaptation of Grow (1991)'s study is presented to illustrate the steps clearly with examples. This figure serves as a guide for teachers.

**Figure 7.**

*Self-Directed Learning Continuum (Brandt, 2020, p.11)*



| Stages of Self-Direction | Student | Teacher | Examples |
|---|---|---|---|
| 5<br>Beyond | Self-Determined | Mentor/<br>Partner | Action research<br>Self-developed project |
| 4<br>High | Self-Directed | Consultant/<br>Delegator | Open-ended performance-, problem-,or project-based task<br>Internship, senior project, term project<br>Dissertation |
| 3<br>Intermediate | Involved | Facilitator | Teacher-approved group project<br>Seminar with teacher as participant (e.g., Socratic seminar |
| 2<br>Moderate | Interested | Motivator/<br>Guide | Teacher-led discussion<br>Lecture followed by guided discussion<br>Guided practice in applying learning stategies (e.g., goal-setting)<br>Skill- building exercises |
| 1<br>Low | Dependent | Authority/<br>Coach | Teacher-led drill<br>Informational lecture<br>Coaching with immediate feedback |

After Grow's four pillars of self-directed learning, the research literature proclaimed four dimensions of self-directed learning, and they are as follows; self-regulation, autonomy, personal responsibility and motivation (Hall, 2011). Self-regulation is used intertwined with self-direction, it differs in that it is more related to learning tasks and varies between tasks, on the other hand, self-directed learning is a broader term that tells more about a student's attitude towards learning itself (Brandt, 2020). Self-regulation's most recognized definition comes from Pintrich (2000). He defines self-regulated learning as an active, formative process in which learners set learning goals and set out to observe, regulate, and manage their cognition, motivation, and behavior that are driven by their initial goals and contextual factors in the environment. Specifically, self-regulation has also an important place in language learning environments because empirical researches have revealed that there is a correlation between students' self-regulation and their language gains (Sahin Kizil & Savran, 2016).

The second dimension of SDL is autonomy which is another sub-components of SDL. The nature of SDL embodies autonomy (Brandt, 2020). Raucent, Vertaz, and Villeneuve (2010, as cited in Adinda & Marquet., 2019) highlighted the key skills of autonomy and summarized it in three categories. The first is the ability to develop a system on its own, the second is awareness and awareness of the work environment, and the third is the ability to cooperate and collaborate. These three skills are directly pertinent to self-direction. In the educational environment, autonomy takes place in the decision-making processes where learners take responsibility for their own learning, and this autonomy provides students with the opportunity to set their own goals, create the learning process and achieve these goals (Little, 1991 as cited in Tok, 2011). Also, autonomy is important, especially in language learning, because so much of language learning takes place outside of the classroom setting, and the way students manage this aspect of learning is crucial to their advancement as language learners (Horwitz, 1987 as cited in Gan, 2004). Despite its importance in the field, studies conducted in Turkey have shown that the only activity to support learner autonomy is group work, but many more

activities are needed to increase learners' autonomy and awareness of their potential (Tilfarlioglu & Ciftci, 2011).

The third dimension of SDL is personal responsibility. It is assumed to be one of the core concepts in self-directed learning and the basis of any theoretical background of SDL (Hall, 2011). Responsibility is defined as making choices and assuming the consequences and impacts of those choices ( Popkin, 1987, as cited in Cevat & Akkaş, 2019). As mentioned earlier, personal responsibility in the educational setting refers to students' ability to realize their own learning that shapes their potential for self-direction (Brockett & Hiemstra, 1991). As a result of taking personal responsibility for learning, deeper learning occurs and students learn skills that will help them throughout their lives (Buitrago, 2017). In the academic setting, students' inclusion of responsibility for learning and studying can be seen as a tool to make students more successful (Hall, 2011). In the process of taking responsibility, the attitude of educators is also seen as an important role, and it is assumed that the primary duty of educators is to develop students' sense of responsibility for their own learning (Brandt, 2020).

Fourth dimension of SDL is motivation and it is seen as a prerequisite to self-direction. Garrison (1997), in his self-direction model, divided motivation into two parts: entering motivation and task motivation. Entering motivation refers to the decision to engage. Garrison hypothesized that entering motivation is higher when students recognize that learning objectives are compatible with their needs and these objectives are attainable. On the other hand, task motivation entails staying on task and carrying on. It is pertinent to task control and the concept of willpower. Willpower is performing conscious effort or assiduity and regarded as a chief aptitude for SDL (Garrison, 1997).

According to Cevat and Akkaş (2019), in today's world where knowledge is rapidly renewed, the main task of education is to give learners the responsibility of learning and working. Additionally, views and findings of many eminent authors indicate that self-directed learning is growingly perceived as a favored educational approach in postmodern economies (Guglielmino, 2011). It is also important to develop self-direction

skills since it is a precondition of making the transfer from class setting to a lifelong learning professional context and this demands an authentic learning environment (van Woezik, 2020). In align with this, at all levels of educational institutions, the development of skills and perspectives for self-direction in learning has begun to take place in the mission and target statements of curricula (Gan, 2004).

More specifically, in English language learning, self-direction skill has been recognized as an important concept (Gan, 2004). Adopting self-direction skills in language classes benefit language proficiency and students' attitude. Tilfarlioglu and Ciftci (2011) conducted a study including preparatory level students in Turkey. This study showed that self-efficacy and learner autonomy, which is a subcomponent of SDL, are significant indicators of learners academic success in language learning and this means that students who are self-efficacious and autonomous are more successful in the process of learning a language. Another study conducted by Mahdavinia and Ahmadi (2011) indicated that adopting a self-directed assessment tool like portfolio has a beneficial effect on learners' all four language skills. On the other hand, Tok (2011) 's research evinced that the learners' English proficiency and motivational level are remarkably and positively connected to their autonomous activities and those learners whose motivation levels and English proficiency are high are more engaged in autonomous activities. His results also revealed that the participants seem to engage in autonomous activities "sometimes" rather than "often" or "always". Dişlen (2011) has arrived at the same conclusion in her study with freshmen students at university and she concluded that students have some consciousness about learner autonomy which represents self-direction; however, they have no idea about its application. Both researchers unveiled that learners have been exposed to traditional teaching in their previous years and being self-directed is a new concept for them. Tilfarlioglu and Ciftci (2011) also indicated that families and principals in schools are dissatisfied with the proficiency level of students in Turkey and this springs from students' inability in self-direction skill and people do not understand the link between learner autonomy, self-efficacy and academic success in language learning process.

Although it is essential to teach learners to be self-directed in the process of learning English, like other subjects, especially in early years of education, no study has been found that investigates the extent to which secondary school English teachers adopt self-direction skills. This study unveiled this point.

### 2.2.6. Making Global and Local Connections

The tremendous change brought about by communication technologies has turned the world into a global village, as McLuhan said (Guillén, 2001). On the other hand -beyond McLuhan's analogy- Castell (1996, as cited in Warschauer, 2000) argued that people lived in a globally produced, locally distributed tailored cottage rather than a global village. As the futurists mentioned above predicted, there is no doubt that in the 21st century, nations are approaching a more integrated and interdependent world faster than ever before (Zhang & Semple, 2016, Friedman, 2006). As a result, today's world has become globalized and globalization has become an important concept. Due to its important position, scholars and researchers in recent years have tried to define globalization based on cultural, political, and economic perspectives (Mosneaguta, 2019). Giddens (1990) defined globalization as the expansion of international relations linking distant localities; such that local problems are shaped by actions taking place miles away and vice versa. By underscoring the importance of telecommunication technology, Gibson-Graham (1996) defined globalization as the procedural steps in which the world is fused with manufacturing and financial marketing and he added that the internationalization of product culture supported by an advanced interconnected global telecommunications network. In a similar vein, Friedman (2006) sees globalization as a procedure to flatten the world as a result of the widespread use of technology. Almost all definitions have in common that globalization is an ongoing process and a movement that requires interdependence of groups around regional societies, countries, and continents (Stromquist, 2002).

In this globalizing world, human beings are expected to be global citizens who can establish global connections around the world. According to Parekh (2003), global

citizenship requires the active participation of the individual in the social, economic and political events that occur at the global stage. On the other hand, Morais and Ogden (2011) interpreted global citizenship as taking responsibility for other citizens in the national and international arena and taking actions that will benefit citizens. UNESCO (2014) put forth that, against plural definitions of global citizenship, there is a common sense that global citizenship is not a mere legal status. It is more related to a sense of association with an expanded community and common society, bolstering a global view that ties the local to the global and the national to international. In addition to the definitions put forward above, global citizenship also includes these dimensions; global issues, human beliefs and values, intercultural understanding, and human rights awareness.

Being a global citizen in the 21st century has gained importance for many reasons, so having global citizens has become a valuable agenda for governments all over the world (Yakovchuk, 2004). Nations need those who can make global connections and understand global, geo-political events entailing awareness of geography, culture, language, history and literature from other regions (Hixson et al., 2012). To achieve this goal, raising globally educated people has taken an important place in 21st century education. According to Kirkwood (2001), globally educated people as those who possess high hightech competence, varied interdisciplinary knowledge about the current world, and versatility, flexibility, and world awareness to engage efficiently in the globalizing world. Kirkwood also articulated that 21st century learners will confront a new world order which necessitates a global education. Global education is crucial for students to develop the knowledge, competencies and attitudes necessary for future employment and to build successful relationships in an increasingly interconnected and diversified society (Crawford and Kirby, 2008; Zhang and Semple, 2016). According to Tye and Kniep (1991), global education includes learning about issues that are beyond national borders and related to the interdependence of organizations. Global education is a comprehensive paradigm that entails the interconnectedness of societies, nations and people and interrelatedness of all social, cultural, and natural phenomena (Burnouf, 2004). Cates (2000) presented the four pillars of global education goals and these are knowledge, skills, attitudes and action. Knowledge is about being informed about world countries and

cultures, global problems, their sources, and solutions. Skills include critical thinking, collaborative problem solving, conflict resolution, approaching issues from different angles. Attitudes comprises global awareness, cultural appreciation, respect for diversity and empathy. Action is about educating students who think globally and act locally. In a similar vein, UNESCO (2014) has proposed four aims of global citizenship education and they are as follows:

- Encouraging students to critically explore real-life problems and creatively find possible solutions.
- Supporting students to reconsider the assumptions, worldviews and power relations in dominant discourses and to accept people who are consistently underrepresented.
- Aiming to take personal and collective action to lead the desired changes
- Involving several collaborators into the community, including those outside the classroom.

According to UNESCO, global citizenship in schools can take place within an existing subject or as a separate subject area. However, according to Holden (2000) global education must be regarded as a basic subject area similar to the current importance of mathematics and reading. On the other hand, Ibrahim (2005) also put forward a basic goal of global education by including local connections, and according to him, it is the teachers who have students aware of their rights and responsibilities to equip them with the skills and knowledge needed to apply democracy from local to global levels. At this point, teachers play a leading role in raising global citizens.

Making local connections is also an important part of 21st century education and global connection. Making local connections within the learning context is defined as being able to apply what students learn to local situations and community issues. Bringing local issues to the learning milieu makes learning relevant (UNESCO, 2009), because working on local issues provides an opportunity to link between what students learn and their real-life experiences and also makes a contribution to students' critical thinking and collaboration skill. Establishing local connections is important, as the local environment

increases student engagement due to the familiarity of the topics (Yang, 2010). Local connection is seen as a prerequisite for global education. Students first become acquainted with local issues and relate them to the global arena

Globalization has caused the spread of English as lingua franca and non-native speakers of English outnumbered the native speakers of English (Warschauer, 2000). As a result of the widespread use of English, 85% of global institutions in the world officially use English, at least 85% of the film industry is in English and 90% of academic articles are in English (Crystal, 1997). There are some expectations from non-native speakers. Non-native speakers of English are required to use the language constantly to present complex issues, global collaboration and negotiation, location and analytical interpretation of expeditiously changing information (Warschauer, 2000). One of the consequences of this situation in the field of ELT is the adoption of communicative language skills (Warschauer, 2000; Yakovchuk, 2004). Bringing global issues into the learning environment and having students discuss them helps them develop their global connection skills as well as their communicative language skills (Yakovchuk, 2004). Dyer and Bushell (1996) argued that students should be supported to use their English to define and articulate their values, to think about global issues, and to speak critically. In addition to that, he puts forth that global education in foreign language teaching entails harmonizing a global perspective with classroom teaching through a focus on global matters, lessons constructed around global problems, classroom activities linking learners to a globalized world and themes such as global citizenship and communal responsibility. English lessons have become one of the most suitable platforms for raising global awareness and educating global citizens (Lenkaitis, Loranc-Paszylk, & Hilliker, 2019; Yakovchuk, 2004), because language classes help students widen their horizons whilst the main focus remains on the native language and culture, encourage them to cope with world issues from a different standpoint. Likewise, being proficient in English in the globalizing world includes not only language proficiency, but also intercultural competence (Dooly & O'dowd, 2012). Intercultural competence is fundamentally important for foreign language learners who are unaware of their intercultural role (Lenkaitis et al., 2019). For the reasons mentioned above, the new goal of language

teachers is to encourage students to be knowledgeable about global and local issues, as well as to make them world citizens who are aware of their own culture, able to critically explore similarities and differences in other cultures (Godwin-Jones, 2015).

It is a well-known fact that educating students for a contemporary and interdependent world, global and local education in K-12 education is not an option but a necessity (Crawford & Kirby, 2008). In spite of its valuable place in the 21st century, there is a scarcity of studies that examine to what extent English language teachers in K-12 include global and local connections in their classes. This study unveiled this question.

### 2.2.7. Using technology As a Tool For Learning

The use of technology plays a major role in acquiring the aforementioned 21st century skills and is even a prerequisite for teaching 21st century skills (Office of Educational Technology, 2017; Voogt, et al., 2013) because the last decades have witnessed the rapid rise of the use of technology in every aspect of human life. The profound developments in ICT have changed the way people work, acquire knowledge and learn, as well as the daily lives of individuals (Akkoyunlu, 2002; Kivunja, 2015b; Ratheeswari, 2018; Szymkowiak, Melović, Dabić, Jeganathan, & Kundi, 2021). Along with the enormous impact of ICT on society, it has caused a shift in economy from the current mode of production to a new technological paradigm and thus the use of ICT has become the main indicator of a nation's productivity and economic growth (Riddell & Song, 2017). As a result of this shift in the economy caused by the rise of ICT use, effective citizens and workers in the 21st century are expected to demonstrate many ICT-related skills, unlike the citizens of the previous century (P21, 2015). 3Rs (reading, writing and arithmetic) are no longer sufficient for work readiness, now it is more related to turn information into knowledge through internet searching and reviewing, creating efficient multimedia presentations as well as utilizing digital tools to collaborate and solve problems (Prensky, 2014).

Raising individuals with ICT related skills needed by the nation is among the primary tasks of education. However, Microsoft's Citizenship Report (2011) states that

workers lack the tech-related skills to find and maintain a job in the modern world economy. In align with this report, ISTE (Casner-Lotto & Barrington, 2006) unveiled that employers think schools fail to prepare students for a tech-driven economy. Traditional educational settings are not appropriate for students to function well and be prolific in the workplaces of current society (Clarke Sr & Zagarell, 2012). The only way to give our students a successful opportunity in the global market is to bridge the technological gap between schools and the work environment, and to meet this need, multifarious organizations around the world -such as UNESCO and ISTE- are devoted to helping integrate ICT into the daily work of schools and education systems (Clarke Sr & Zagarell, 2012). In addition, schools are expected to provide students with the new types of literacy that have entered our lives with technology to close the gap between the real life expectations and education. Trilling and Fadel (2009) included two types of technology-related literacy in their book; media and ICT literacy skills. They adopted the P21 framework to present what is expected of students in terms of these types of literacy. Media literacy is about the ability to interpret, evaluate, analyze, and create electronic media. With regard to media literacy skills, students are supposed to analyze media;

- Fathom how and why media messages are created and for what purposes.
- Explore how individuals interpret messages differently, how whether values and perspectives are included and how the media can affect beliefs and behaviors.
- Apply a basic understanding of the ethical and legal issues surrounding media access and media use and create media products.
- Understand and use the most appropriate media creation tools, features and conventions.
- Understand and use most appropriate expressions effectively and interpretations in diverse and multicultural settings.

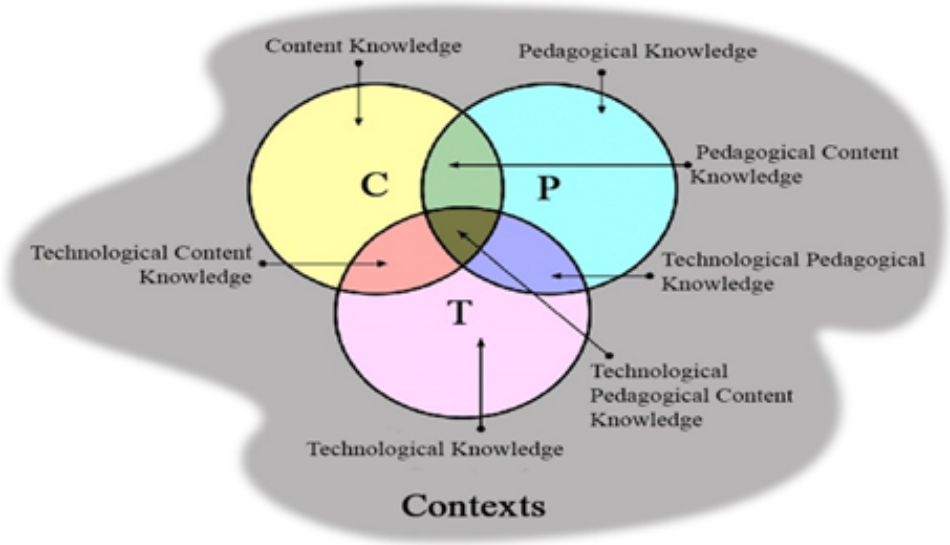
In terms of ICT literacy skills, students are supposed to apply technology efficiently;

- Utilize technology as a tool to research, organise, evaluate, and communicate information.
- Use digital technologies, communication/network tools and social networks appropriately to access, manage, integrate, evaluate, and create information to work successfully in the knowledge economy (Trilling & Fadel, 2009).

Teachers have a key role to play in providing students with the aforementioned traits and further ICT-related skills. In previous centuries, teachers and books were the main source of information, and the role of teachers was to disseminate knowledge. This learning environment has changed dramatically as today's learners - the so-called generation Z - prefer technology to books and want the same to happen in the learning process in schools (Szymkowiak et al., 2021). As a consequence of both learners' and 21st century work and social environment's demand and so on, the teaching and learning methods have shifted from teacher-centered to learner-centered ones (Riasati, Allahyar, & Tan, 2012). In this respect, teachers need to renovate traditional teaching methods and adapt the learning environment to modern requirements (Szymkowiak et al., 2021). However, making this transition is not easy because teachers need guidance in both the theoretical and practical background. It is important to provide teachers with information on how to adapt technology to their daily lessons because there is a positive relationship between the frequency of ICT use and the pedagogical orientation towards 21st century learning (Voogt et al., 2013). One of the most suitable and mentioned guides for teachers on technology integration is the Technological Pedagogical and Content Knowledge (TPACK) model put forward by Mishra and Koehler (2008). Mishra and Koehler argue that there are three key components at the heart of good teaching with technology: Content, Pedagogy and Technology. Based on this argument, TPACK is the intersection of these three bodies of knowledge, and understanding this fusion goes beyond understanding technology, content, and pedagogy in isolation, but rather an emerging form that unravels how these knowledge structures interact with each other (Mishra & Koehler, 2008). Below is the figure showing the interaction of the three bodies of knowledge.

***Figure 8.***

*The TPCK Framework and Its Knowledge Components (Mishra & Koehler, 2008, p.3)*




In the figure, Content Knowledge is knowledge pertinent to the actual subject matter that is to be acquired or taught. Pedagogical Knowledge is deep knowledge of the processes and practices or methods of teaching and learning and how this encompasses (among other things) general educational aims and values. The first intersection in the figure is between pedagogy and content knowledge. The important point here is that each discipline is taught in a different teaching strategy. Here the teacher adjusts the subject according to the students' prior knowledge.The second intersection is Technological Content Knowledge (TCK for short). TCK is an understanding of the way technology and content affect and constrain each other. Accordingly, educators need to understand that the subject matter can be enhanced or changed by the implementation of technology. By adding technology to Pedagogical Content Knowledge, educators should be cognizant that in the 21st century teaching, technology has an essential role. TPACK framework is an influential model which plays a crucial role in understanding the knowledge teachers need to include ICT in their teaching. Seeing teachers' use of technology as a new literacy

highlights the role of teachers as a producer, away from the traditional conceptualization of them as consumers of technology (Mishra & Koehler, 2008).

Once teachers have integrated technology to their teaching, copious benefits of technology use in education are to be seen. Here are some benefits of using technology as a tool for learning by Office of Educational Technology (2017) :

- Technology can empower individualized learning or experiences that are more engaging and relevant.
- Technology serves as a tool to introduce real-world problems into the classroom using a variety of ICT tools.
- Technology enables learning to move beyond the classroom and learning opportunities found in museums, libraries and other out-of-school settings.
- Technology helps students follow their dreams and passions.
- When equitably accessed, technology can bridge the digital divide and make learning opportunities accessible to all students.

The advancement of technology and its integration to education has also changed English language teaching and learning (Ahmadi, 2018). The integration of technology into language classrooms has given rise to an approach called Computer Assisted Language Learning (CALL). The application of CALL has caused a positive change in learners in terms of learning attitudes and self-confidence (Ahmadi, 2018). In addition to that, the study conducted by Özerol (2009) showed that teachers from different schools in Turkey stated that the use of technology reduces students' language learning anxiety and gives them more chances to communicate. After technology is used as a tool for language learning, it has brought various benefits such as increased engagement of students, enhancement in academic ability, more student-led learning environment, process-oriented assessment, collaborative learning enhancement as well as lowering learning anxiety level (Riasati, Allahyar, & Tan, 2012). In line with this, the literature also designated that effective use of technology improves learners' language learning skills (Ahmadi, 2018).

The use of ICT in schools has been on the agenda of MONE since the 1930s in Turkey (Akkoyunlu, 2002). One of the primary aims of MONE is to catch up to the information society and to realize this aim, it is compulsory to support educational systems at all levels with ICT for both teachers and students (Akkoyunlu, 2002). The studies are being carried out to see how much this goal is implemented in practice. Especially in the last two years, with the transition to distance education due to Covid, most of the research in Turkey is on technology and education (Ersoy & Gürgen, 2021). In spite of this increase, there is a scarcity of studies which investigate to what extent secondary school English language teachers use technology as a tool for learning. This research aimed to fill this gap in the literature.

## 2.3 The Role of English Language Teaching in 21st Century

Over the past few decades, English has been used in many areas of life all over the world such as global media, scientific and ICT advancements, international forums, business, politics, finance, diplomacy, sports and entertainment (Pardede, 2012). As a result, English is not only a language spoken in the USA or the UK, but also the language of international communication (Goldfus, 2011). As Crystal (1997) pointed out, 85% of global institutions in the world officially use English, at least 85% of the film industry is in English, and 90% of academic articles are in English. In addition, the area where English is felt most intensely is the economy. English has been used for international and even national language not only in U.S. and UK based companies but also in European and Asian based companies (Warschauer, 2000), therefore; English has been an indicator of getting a better job in the globalizing world (Pardede, 2012). According to Warschauer (2000), because of the shift toward a global informational economy, more countries in the global market will need employees who know English in miscellaneous jobs, from webmaster to food server. Owing to the medium of advancement and economy, English has become a necessity for citizens in the 21st century and they use English as their additional/own language, not a foreign language (García-Herreros Machado, 2017).

The economy and employment as well as progress in every field have changed the way English is used. Non-native English speakers are required to use English for more complex purposes such as international communication and cooperation, presenting complex ideas, and interpreting rapidly changing information (Pardede, 2012; Warschauer, 2000). The important point here is not only to use language simply to decipher messages, but to actively use language by using 21st century skills in the globalizing and digitized world. In the 21st century, individuals with a good command of English and using it by employing 21st century skills are in demand by both national and international companies. For these reasons, the field of teaching English can no longer be seen as the backburner of education, but rather, because English is the language of international-national communication and English fluency is the key to development in this century, English teaching has gained great importance almost all over the world. It has been at the center of every country's education agenda in the world (Goldfus, 2011).

As noted earlier, advances in ICT and other fields have opened up new areas in the use of English that have created new challenges in teaching English and new challenges for English teachers to introduce (Altan, 2017). In former times, English classes were grounded in grammar, memorization, and mastery of language, learners were required to gain native-like proficiency, but now as a result of wide spread of English, varieties of English have emerged such as Singilish or Chinglish (Pardede, 2012). In this regard, the focus of English language teaching in the 21st century needs to be different from that of former times and deviate from traditional methods, but rather it needs to include global issues along with 21st century skills (Altan, 2017; Çınar, 2021; Pardede, 2020; Warschauer, 2000). In line with this, Fandiño Parra (2013) argued that 21st century skills and English teaching must go hand in hand and learners in English language classes must develop global connection, self-direction, creativity, critical thinking, communication and collaboration skills. English classes are no longer those places where students solely use textbooks, but instead various options are present and these options necessitates distinct kinds of skills both verbally and written (Altan, 2017).

The rapid spread of English as a result of globalization has affected language teaching policy and programs all over the world. As nations have figured out, the quality of education will undoubtedly determine the losers and winners of the globalizing world. Accordingly, many countries have made reforms in their language teaching and learning policies in order to have citizens who can compete in the global arena, and Turkey is one of these countries. Bordered by eight nations and surrounded by three seas, Turkey has a strategic and geopolitical location that makes learning English vital, and therefore, English occupies an important place in every aspect of life, from politics to economy, education to daily life (Kirkgoz, 2005). Conventionally, the English teaching method in Turkey has been grammar translation, where students are heavily taught grammar and vocabulary, and the teacher-led model was ubiquitous in English lessons (Kirkgoz, 2005). As a consequence of outdated teaching methods, even though Turkey is the 17$^{th}$ largest economy in the world, Turkey consonantly scores very low on numerous measures of English language speaking (Altan, 2017). To solve this problem and enhance teaching and learning in English, as of 2012, English started to be taught from the 2nd grade. In addition to this change, MoNE implemented the latest curriculum reform in all subject areas, including English, in 2017 in order to keep up with the 21st century (Altan, 2017). According to the regulations, English language learners are expected to earn competencies appropriate for the era they are in  and current ways of language gain to thrive in their future careers and daily lives. As in all educational shifts, teachers are always at the forefront of change. To increase the level of teaching, in Turkey's Education Vision 2023 report, MoNE (2018) has stated its aims in foreign language teaching training. According to this report,

> Post-graduate programs, international certification, theme-specific certification and similar training activities will be organized through and offline methods for all foreign language teachers. This will be done within the framework of three year projections, with the support of international organizations, higher education institutions, and NGOs. For high-quality foreign language education, a National

> Foreign Language Education Council will be created to establish foreign language education policies, education standards, and in-class practices as well as teacher qualifications. (p.70)

As seen in MoNE's 2023 vision report, English teachers need to do much more than in the past to integrate the skills necessary to be successful in the globalizing and digital world of the 21st century. The changing role of language teachers has brought with many responsibilities, and the choice of approach and methodology has a very significant impact on language teaching. However, as Kirkgoz (2005) stated there has always been a huge gap between ideal language policy and existent teaching practices. Within the scope of the secondary aim of this study, the underlying dichotomy of this problem was unveiled.

# CHAPTER 3: METHODOLOGY

## 3.1. Research Design

Since this study contains both quantitative and qualitative data in nature, a mixed-methods design was used to best answer the research questions. In a mixed-methods design, both quantitative and qualitative methods are included in a single study (Fraenkel, Wallen, & Hyun, 2012). As Dörnyei (2007) points out, employing a mixed-methods design provides us with more reliable data and gives more insight into the results of the study.

Single scanning model from scanning models and comparative survey model were used for the quantitative part of the study. Single scanning is the model in which the individuals or quantity formations of the variables are determined (Karasar, 2015). This model was used to present teachers' overall measures of the scale based on eight 21st century skills. In comparative survey model, the differences between two or more variables are examined (Karasar, 2015). Using the comparative survey model, teachers' background variables were examined to see if these variables showed a significant difference in integrating these skills into their classrooms.

In the second phase of the present study, the researcher conducted a qualitative research model. In qualitative research models, qualitative data collection tools such as interview, observation, and documents are used and events are presented with a realistic approach (Yıldırım & Şimşek, 2013). In this study, the researcher used semi-structured interviews to deepen the study and shed light and detail on the quantitative data.

## 3.2. Research Setting and Participants

This study was conducted in İstanbul, Turkey, in the 2020-2021 academic year. At the beginning, the participants of the quantitative part of the study were 120 English language teachers working in a private or public secondary school. However, before starting the statistical analysis, the Z scores of the participants were checked and the answers of a participant whose self-direction skill was above +3 and -3 values was excluded from the analysis, and the answers of the remaining 119 people were included and analyzed. Due to Covid-19, the 21st Century Teaching and Learning scale (see Appendix 2) was distributed digitally through Google forms. All necessary permissions were obtained (see Appendix 7 and 8) before the scale was applied. All the participants voluntarily answered scale items. Convenience and snowball sampling methods were used in the selection of the participants. In convenience sampling, those individuals who are easily accessible and available for the study are selected (Fraenkel et al., 2012). In snowball sampling, existing participants recommend others with suitable characteristics for research, and thus the number of participants required for research increases (Fraenkel, Wallen, & Hyun, 2012). The researcher initially used convenience sampling, and others were included with the help of snowball sampling. Demographic background of the participants is presented in Table 1.

***Table 1.***

*Demographic Background of the Participants*

| | | ***n*** |
|---|---|---|
| **Years of experience** | 0-5 | 40 |
| | 6-11 | 34 |
| | 11-15 | 24 |
| | 15+ | 21 |
| **Training On 21st Century Skills** | Yes | 69 |
| | No | 50 |
| **School Type** | Public | 76 |
| | Private | 43 |
| **Level of Education** | BA | 102 |
| | MA/PhD | 17 |

In the second phase of the study, 26 volunteers from 119 participants who answered the scale items by convenience sampling were included in the study. Eight of the participants were from private school while the rest were from public school. Mediated interviews were conducted via Google forms. Mediated interviews are carried out not face to face, but through devices such as the internet, telephone or computer (Tracy, 2019). There are some benefits to conduct mediated interviews. First, the researcher and the participants do not have to be tied to place and time. Second, participants feel more comfortable and answer questions without feeling any pressure. Another advantage of this is that participants have plenty of time to think before answering any questions (Tracy, 2019).

## 3.3. Data Collection Tools

In the present study, there are two types of data collection tools and they are presented below.

### 3.3.1. The Scale

In order to find out English language teachers' 21st century skills practices, 21st Century Teaching and Learning scale ( see Appendix 2) developed by Hixson et al. (2012) was conducted. The scale has high reliability, improving on reliable measures from previous studies (std. alpha > .90, inter-item correlations > .58). The scale includes eight categories and 48 items measuring teachers' 21st century skill practices. Each category includes two parts. The first part presents the definition of the related 21st century skill. In the second part, there are 5-point Likert scale items scored from 1 ' Almost never' to 5 ' Almost daily'. A demographic information questionnaire was added by the researcher and there are three sections in the quantitative data collection tool. After the scale was conducted with 119 participants, the reliability of the results was checked. The Cronbach's Alpha Coefficient was found to be 0,97, which means that the reliability of the present study is very high (Ebel, 1954, as cited in Can, 2019).

### 3.3.2. The Interview

In order to address the third research question and to deepen the study, eight semi-structured interviews (see Appendix 4 and 5) were conducted. All questions were administered in the participants' mother tongue to make them feel comfortable while writing answers and to avoid misunderstandings. The questions were prepared by the researcher based on the existing literature (Anderson, 2020; Eker, 2020; Ekinci, 2019; Güvendir, 2017; Hardiman, 2020; Kaçar, 2020; Korkmazgil, 2015; Orak, 2019; Pilpe, 2020; Rice, 2017; Stover, 2018; Wattanavorakijkul, 2019; Wilcox, Liu, Thall, & Howley, 2017). After expert view, pilot interviews were conducted with three English teachers working in a private secondary school to check the validity of the interview questions. Following the pilot study, the interview questions were revised and the interviews were conducted.

## 3.4. Data Collection Procedure

The data were collected in the second semester of the 2020-2021 academic year after a period of 3 months**.** Due to Covid-19, data were obtained via Google Forms instead of face-to-face meetings. The data collection process was carried out in two phases**.** In the first phase of the study, the researcher sent the scale she prepared via the Google form to the teachers she could reach. The teachers reached by the researcher also sent the scale to other teachers they knew and thus, 120 teachers were reached. In the second stage of the study, the researcher sent the semi-structured interview questions to the teachers she could reach via the Google form and 26 of the 120 teachers who answered the scale were included in the study.

## 3.5. Data Analysis

SPSS 22 (Statistical Package for the Social Sciences ) was used for the analysis of quantitative data. Descriptive statistics such as mean, percentage and standard deviation were used to reveal the overall degree of teachers' 21st century skill practice. In addition, the Independent Samples t-test was used to reveal whether the education level of the teachers, the type of school they work in, and their training on 21st century skills

show a significant difference in the implementation of 21st century skills. Besides, one-way analysis of variance (ANOVA) was conducted to show whether the years of experience of teachers on 21st century teaching practices show a significant difference or not.

In order to analyze qualitative data, content analysis was employed. Content analysis is a scientific approach that *"enables researchers to study human behaviour in an indirect way, through an analysis of their communication"* (Fraenkel et al., 2012, p. 478). The main purpose of content analysis is to present the general intended content and message of written text or oral data transcribed into written text (Cohen, Manion, & Morrison, 2002). At the stage of content analysis, the researcher determines the words and concepts that can create common categories or themes. In the present study, the researcher created codes and categories by inductive and deductive approach. In the deductive content analysis approach, codes and categories are created based on the existing literature or a theory, while in the inductive approach, the categories are created by the researcher based on the text, not the existing literature (Elo & Kyngäs, 2008). Having been informed by the related body of literature (Anderson, 2020; Eker, 2020; Ekinci, 2019; Güvendir, 2017; Hardiman, 2020; Kaçar, 2020; Korkmazgil, 2015; Orak, 2019; Pilpe, 2020; Rice, 2017; Stover, 2018; Wattanavorakijkul, 2019; Wilcox, Liu, Thall, & Howley, 2017), the researcher kept various studies already revealed in mind while she was coding the data. In addition to deductive analysis, the inductive approach was employed by creating categories for different views in the text. The researcher also used manifest and latent content together while creating codes and categories. Latent content refers to the meaning behind what the participant is saying, while manifest content refers to the obvious and surface of the words. The steps highlighted in Elo and Kyngäs (2008) were followed while analyzing the data. First, in the preparation phase, the unit of analysis was selected and the researcher made herself familiar with data until making sense of it as a whole. In the second phase, data are coded according to the existing categories and emerging categories (inductive approach). To ensure the reliability of the categories found, the researcher coded the data again after a while and performed Cohen's Kappa analysis to calculate the similarity between the two codings. Obtained value is

0.89. Accordingly, this result shows that there is a very good level of agreement between the codings and that the coding is reliable (Altman, 1999, as cited in Can, 2019). In the final stage, the analysis of the data is shown in the tables by specifying the frequencies and percentages of the subcategories.

# CHAPTER 4: FINDINGS

In this chapter, statistical findings of quantitative data are presented primarily based on the research questions. Secondly, the results of the qualitative data are introduced respectively.

## 4.1. Secondary School English Language Teachers' 21st Century Skills Teaching Practices

To address the first research question as well as sub-question of the first question, teachers' 21st century skills teaching practices are examined under eight skills: critical thinking, collaboration, communication, creativity and innovation, self-direction, global connections, local connections, and using technology as a tool for learning. Analysis of teachers' practices within each skill and the mean scores for the whole scale and the sub-skills are presented in the tables in the following sections.

### 4.1.1. Critical Thinking Skills

There are six items measuring teachers' critical thinking skills teaching practices. As it is presented in Table 2, the most frequently used practice is 'summarize or create their own interpretation of what they have read or been taught' (M=3.00). 29.4% of the teachers use this practice once or three times a month, 26.9% a few times a semester, and 23.5% once or three times a week. Only 9.2 % of the participants never employ this practice while 10.9 % of them include it on a daily basis. The lowest mean score belongs to 'develop a persuasive argument based on supporting evidence or reasoning' (M=2.53). 21.8% of the teachers do not use this practice at all, 32.8% apply it a few times a semester, and 21.8% apply it once or three times a month. 16.8 % of the teachers include this practice once or three times a week while 6.7 % include it on a daily basis.

Overall, the data on teachers' critical thinking skills teaching practices show that approximately 13% of the teachers do not include almost any of the practices presented in Table 2 , while more than the half of them use these skills from a few times a semester to almost daily basis.

***Table 2.***

*Descriptive Statistics of Critical Thinking Skills Teaching Practices*

| **How often have you asked students to do the following** | **Almost Never (%)** | **A few times a semester (%)** | **1-3 times a month (%)** | **1-3 times per week (%)** | **Almost daily (%)** | ***M*** | ***S.D*** |
|---|---|---|---|---|---|---|---|
| Summarize or create their own interpretation of what they have read or been taught? | 9.2 | 26.9 | 29.4 | 23.5 | 10.9 | 3.00 | 1.14 |
| Try to solve complex problems or answer questions that have no single correct solution or answer? | 13.4 | 28.6 | 27.7 | 18.5 | 11.8 | 2.86 | 1.21 |
| Draw their own conclusions based on analysis of numbers, facts, or relevant information? | 11.8 | 36.1 | 24.4 | 19.3 | 8.4 | 2.76 | 1.14 |
| Analyze competing arguments, perspectives or solutions to a problem? | 10.1 | 34.5 | 32.8 | 15.1 | 7.6 | 2.75 | 1.07 |
| Compare information from different sources before completing a task or assignment? | 14.3 | 30.3 | 31.1 | 16.8 | 7.6 | 2.73 | 1.13 |
| Develop a persuasive argument based on supporting evidence or reasoning? | 21.8 | 32.8 | 21.8 | 16.8 | 6.7 | 2.53 | 1.19 |
| **Overall Mean** | | | | | | **2.77** | **.98** |

### 4.1.2. Collaboration Skills

Table 3 presents descriptive statistics of the teachers' collaboration skills teaching practices. According to the table, working in pairs or small groups to complete a task together is widely addressed by teachers (M=3.30 ). Most of the teachers (35.3 %) use this practice on a monthly basis. While 16% of the participants integrate this activity on a daily basis, 2.5% do not apply it at all. The least addressed collaboration skill is 'create joint products using contributions from each student' (M =2.88 ). 26.9% of the participants use this skill a few times a semester, 33.6% once or three times a month, 23.5% once or three times a week. While 10.1 % of the teachers almost never include this practice, 5.9% apply it almost daily.

In general, the findings of the overall data of collaboration skills teaching practices show that the majority of teachers (about 93%) include the practices shown in Table 3 in their classrooms to some extent.

***Table 3.***

*Descriptive Statistics of Collaboration Skills Teaching Practices*

| **How often have you asked students to do the following** | **Almost Never (%)** | **A few times a semester (%)** | **1-3 times a month (%)** | **1-3 times per week(%)** | **Almost daily (%)** | ***M*** | ***S.D*** |
|---|---|---|---|---|---|---|---|
| Work in pairs or small groups to complete a task together? | 2.5 | 21.8 | 35.3 | 23.5 | 16.8 | 3.30 | 1.07 |
| Give feedback to peers or assess other students' work? | 7.6 | 23.5 | 35.3 | 19.3 | 14.3 | 3.09 | 1.14 |
| Work with other students to set goals and create a plan for their team? | 6.7 | 28.6 | 30.3 | 22.7 | 11.8 | 3.04 | 1.12 |
| Present their group work to the class, teacher or others? | 5.0 | 31.1 | 39.5 | 16.8 | 7.6 | 2.90 | .99 |
| Work as a team to incorporate feedback on group tasks or products? | 6.7 | 30.3 | 37.8 | 17.6 | 7.6 | 2.89 | 1.02 |
| Create joint products using contributions from each student? | 10.1 | 26.9 | 33.6 | 23.5 | 5.9 | 2.88 | 1.06 |
| **Overall Mean** | | | | | | **3.01** | **.91** |

### 4.1.3. Communication Skills

In terms of communication skills, Table 4 shows that teachers' mean scores range between 3.10 and 2.57. Teachers address 'answer questions in front of an audience' practice mostly (M=3.10 ). Most of the teachers (31.1%) include this skill once or three times a month, 15.1% once or three times per week, 18.5% daily, and finally 5.9% never include it. The least conducted communication skill is 'structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs)'(M=2.57).

The overall results show that less than 10% of teachers almost never integrate the skills presented in Table 4. However, more than half of the teachers employ the practices in their classes from a few times a semester to almost every day.

***Table 4.***

*Descriptive Statistics of Communication Skills Teaching Practices*

| **How often have you asked students to do the following** | **Almost Never (%)** | **A few times a semester (%)** | **1-3 times a month (%)** | **1-3 times per week (%)** | **Almost daily (%)** | ***M*** | ***S.D*** |
|---|---|---|---|---|---|---|---|
| Answer questions in front of an audience? | 5.9 | 29.4 | 31.1 | 15.1 | 18.5 | 3.10 | 1.19 |
| Convey their ideas using media other than a written paper (e.g., posters, video, blogs, etc.)? | 11.8 | 21.0 | 43.7 | 16.8 | 6.7 | 2.85 | 1.05 |
| Decide how they will present their work or demonstrate their learning? | 12.6 | 32.8 | 30.3 | 16.0 | 8.4 | 2.74 | 1.12 |
| Prepare and deliver an oral presentation to the teacher or others? | 12.6 | 31.1 | 36.1 | 14.3 | 5.9 | 2.69 | 1.05 |
| Structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs)? | 14.3 | 36.1 | 33.6 | 9.2 | 6.7 | 2.57 | 1.06 |
| **Overall Mean** | | | | | | **2.79** | **.89** |

### 4.1.4. Creativity and Innovation Skills

Table 5 presents descriptive statistics pertaining to teachers' creativity and innovation teaching practices. The findings unveil that the most widely used practice is generating ideas about how to handle a problem or question (M=3.01). Teachers mostly use this skill on a monthly basis (29 %) or a few times a semester (27%) . While 14% use this skill almost every day, 9% do not use it at all. Teachers' weakly used practice is creating a novel product to convey one's ideas (M=2.84).

Findings show that less than 15% of the teachers almost never integrate the skills whereas the majority of teachers (approximately 85%) conduct the skills presented in Table 5 from a few times a semester to almost daily.

***Table 5.***

*Descriptive Statistics of Creativity and Innovation Skills Teaching Practices*

| **How often have you asked students to do the following** | **Almost Never (%)** | **A few times a semester (%)** | **1-3 times a month (%)** | **1-3 times per week (%)** | **Almost daily (%)** | ***M*** | ***S.D*** |
|---|---|---|---|---|---|---|---|
| Generate their own ideas about how to confront a problem or question? | 9.2 | 27.7 | 29.4 | 19.3 | 14.3 | 3.01 | 1.19 |
| Use idea creation techniques such as brainstorming or concept mapping? | 12.6 | 20.2 | 38.7 | 17.6 | 10.9 | 2.94 | 1.15 |
| Test out different ideas and work to improve them? | 10.1 | 31.1 | 32.8 | 13.4 | 12.6 | 2.87 | 1.16 |
| Invent a solution to a complex, open-ended question or problem? | 12.6 | 31.1 | 31.1 | 19.3 | 5.9 | 2.74 | 1.09 |
| Create an original product or performance to express their ideas? | 14.3 | 32.8 | 31.1 | 13.4 | 8.4 | 2.68 | 1.13 |
| **Overall Mean** | | | | | | **2.85** | **1.00** |

### 4.1.5. Self-Direction Skills

Within the scope of self-direction skills, there are seven items measuring teachers' teaching practices. As can be seen in Table 6, the range between the most used skill and the least used one is narrow. The most frequent practice is receiving feedback from others to enhance one's work (M=2.90 ). The majority of teachers (36%) embrace this practice once or three times a month. A small portion of them (10%) never use this skill whilst 13% include it almost daily. Besides, teachers weakly employ selecting their own subject of learning to follow item (M=2.62 ).

Overall data show that less than 12% of teachers never include the skills shown in Table 6, while about 64% of teachers use the skills a few times a semester or once or three times a month. On the other hand, around 24% of teachers include these skills once or three times a week or almost daily.

***Table 6***.

*Descriptive Statistics of Self-Direction Skills Teaching Practices*

| **How often have you asked students to do the following** | **Almost Never (%)** | **A few times a semester (%)** | **1-3 times a month (%)** | **1-3 times per week (%)** | **Almost daily (%)** | ***M*** | ***S.D*** |
|---|---|---|---|---|---|---|---|
| Use peer, teacher or expert feedback to revise their work? | 10.9 | 26.9 | 36.1 | 12.6 | 13.4 | 2.90 | 1.17 |
| Choose for themselves what examples to study or resources to use? | 10.1 | 28.6 | 31.9 | 25.2 | 4.2 | 2.84 | 1.04 |
| Plan the steps they will take to accomplish a complex task? | 10.1 | 31.1 | 31.9 | 21.0 | 5.9 | 2.81 | 1.06 |
| Monitor their own progress towards completion of a complex task and modify their work accordingly? | 12.6 | 29.4 | 32.8 | 16.0 | 9.2 | 2.79 | 1.13 |
| Use specific criteria to assess the quality of their work before it is completed? | 11.8 | 32.8 | 36.1 | 12.6 | 6.7 | 2.69 | 1.05 |
| Take initiative when confronted with a difficult problem or question? | 10.9 | 34.5 | 35.3 | 16.0 | 3.4 | 2.66 | .98 |
| Choose their own topics of learning or questions to pursue? | 14.3 | 37.8 | 26.1 | 15.1 | 6.7 | 2.62 | 1.11 |
| **Overall Mean** | | | | | | **2.76** | **.87** |

### 4.1.6. Global Connections

There are six items related to global connections teaching practices, and their mean scores are close to each other, between 2.88 and 2.52, according to the Table 7. The most frequent adopted practice is understanding other cultures (M=2.88). Participants mostly adopt this skill a few times a semester (32%) and once or three times a month (25%). Only 10% of them never practice this skill, on the other hand, 11% practice it almost daily. The least employed skill is discussing issues pertaining to global interdependence (M=2.52). Majority of the teachers (36.1%) employ this skill just a few times a semester.

The general results of global connections teaching practices indicate that about 15% of the teachers almost never give time to global connection skills whilst around 60% of the participants apply these practices a few times a semester or once or three times a month. On the other hand, about 24% of the teachers include the practices once or three times a week or almost daily.

***Table 7.***

*Descriptive Statistics of Global Connections Teaching Practices*

| **How often have you asked students to do the following** | **Almost Never (%)** | **A few times a semester (%)** | **1-3 times a month (%)** | **1-3 times per week (%)** | **Almost daily (%)** | ***M*** | ***S.D*** |
|---|---|---|---|---|---|---|---|
| Understand the life experiences of people in cultures besides their own? | 10.9 | 32.8 | 25.2 | 19.3 | 11.8 | 2.88 | 1.19 |
| Study information about other countries or cultures? | 12.6 | 37.8 | 25.2 | 17.6 | 6.7 | 2.68 | 1.11 |
| Use information or ideas that come from people in other countries or cultures? | 12.6 | 38.7 | 25.2 | 16.8 | 6.7 | 2.66 | 1.10 |
| Reflect on how their own experiences and local issues are connected to global issues | 18.5 | 15.3 | 23.5 | 13.4 | 9.2 | 2.59 | 1.20 |
| Study the geography of distant countries | 16.8 | 35.3 | 30.3 | 10.1 | 7.6 | 2.56 | 1.17 |
| Discuss issues related to global interdependency | 18.5 | 36.1 | 26.1 | 13.4 | 5.9 | 2.52 | 1.11 |
| **Overall Mean** | | | | | | **2.65** | **.98** |

### 4.1.7. Local Connections

Table 8 presents the descriptive statistics items of local connections teaching practices of the teachers. As the table shows, the participants mostly employ the item ‘apply what they are learning to local situations, issues or problems’ (M=2.78). Nearly half (36%) employ this skill once or three times a month, while 25% use it a few times a semester. On the other hand, a minority (8%) use it almost daily, and 14% never include it. ‘Analyzing how different stakeholder groups or community members view an issue’ is the most weakly used practice by teachers ( M=2.29).

The overall findings of local connections teaching practices point out that around 20% of the participants almost never use the practices presented in Table 8 while about 62 % of them include the practices a few times a semester or once or three times a month. Finally, it is seen that less than 20% of the teachers apply these skills once or three times a week or almost daily.

***Table 8.***

*Descriptive Statistics of Local Connections Teaching Practices*

| **How often have you asked students to do the following** | **Almost Never (%)** | **A few times a semester (%)** | **1-3 times a month (%)** | **1-3 times per week (%)** | **Almost daily (%)** | ***M*** | ***S.D*** |
|---|---|---|---|---|---|---|---|
| Apply what they are learning to local situations, issues or problems? | 14.3 | 25.2 | 36.1 | 16.0 | 8.4 | 2.78 | 1.13 |
| Investigate topics or issues that are relevant to their family or community? | 10.1 | 33.6 | 31.9 | 18.5 | 5.9 | 2.76 | 1.05 |
| Respond to a question or task in a way that weighs the concerns of different community members or groups? | 22.7 | 29.4 | 28.6 | 13.4 | 5.9 | 2.50 | 1.15 |
| Talk to one or more members of the community about a class project or activity? | 18.5 | 33.6 | 33.6 | 7.6 | 6.7 | 2.50 | 1.08 |
| Analyze how different stakeholder groups or community members view an issue? | 29.4 | 30.3 | 28.6 | 5.0 | 6.7 | 2.29 | 1.14 |
| **Overall Mean** | | | | | | **2.57** | **1.00** |

### 4.1.8. Using Technology as a Tool For Learning

Using technology as a tool for learning contains eight items and descriptive statistics of these items are presented in Table 9. Findings show that the most frequently addressed skill is choosing suitable technological tools for completing a task (M=3.52). The majority of teachers (30%) use this skill on a daily basis in their classes, and only 5% almost never use this skill. On the other hand, the mean scores of 'using technology for self-instruction (M=3.48) and to help them share information' (M=3.48) are very close to the first most frequently used skill. The least adopted practice is 'using technology to interact directly with experts or members of local/global communities' (M=2.84).

The general results show that less than 12% of the teachers almost never implement the practices shown in Table 9. On the other hand, about 46% of the participants apply the skills a few times a semester or once or three times a month while around 40% include the practices in classes once or three times per week or almost daily.

**Table 9.**

*Descriptive Statistics of Using Technology as a Tool for Learning*

| **How often have you asked students to do the following** | **Almost Never (%)** | **A few times a semester (%)** | **1-3 times a month (%)** | **1-3 times per week (%)** | **Almost daily (%)** | ***M*** | ***S.D*** |
|---|---|---|---|---|---|---|---|
| Select appropriate technology tools or resources for completing a task? | 5.9 | 16.0 | 28.6 | 19.3 | 30.3 | 3.52 | 1.24 |
| Use technology or the Internet for self-instruction? | 10.1 | 11.8 | 27.7 | 20.2 | 30.3 | 3.48 | 1.30 |
| Use technology to help them share information? | 6.7 | 19.3 | 24.4 | 17.6 | 31.9 | 3.48 | 1.30 |
| Use technology to support team work or collaboration? | 10.9 | 18.5 | 27.7 | 19.3 | 23.5 | 3.26 | 1.30 |
| Evaluate the credibility and relevance of online resources? | 10.1 | 21.8 | 31.1 | 15.1 | 21.8 | 3.16 | 1.27 |
| Use technology to analyze information (e.g., databases, spreadsheets, etc.)? | 14.3 | 24.4 | 21.8 | 17.6 | 21.8 | 3.08 | 1.36 |
| Use technology to keep track of their work on extended tasks or assignments? | 15.1 | 21.0 | 25.2 | 20.2 | 18.5 | 3.05 | 1.32 |
| Use technology to interact directly with experts or members of local/global communities? | 21.8 | 20.2 | 26.9 | 13.4 | 17.6 | 2.84 | 1.38 |
| **Overall Mean** | | | | | | **3.23** | **1.14** |

### 4.1.9. Mean Scores of 21st Century Skills Teaching Practices

Table 10 shows the mean score of the whole scale and also the mean scores of the sub-skills of the scale. As the mean score of the whole scale indicates (M=2.86) teachers use 21st century skills approximately once or three times a month. On the other hand, according to this table, the 21st century skill that teachers use most in their classes is using technology as a tool for learning (M=3.23). Collaboration skills come after technology use (M=3.01). In contrast, it is seen that the skill that teachers employ the least in their classes is local connections (M=2.57), followed by global connections (M=2.65).

The fact that the standard deviation of each sub-skill was close to 1 showed that there was a high variability in the answers of the teachers.

***Table 10.***

*Mean Scores for Each 21st Century Skills*

| | **M** | **S.D** |
|---|---|---|
| Mean score of the whole scale | 2.86 | 0.07 |
| **Sub-skills of the scale** | | |
| Using technology as a tool for learning | 3.23 | 1.14 |
| Collaboration | 3.01 | 0.91 |
| Creativity and innovation | 2.85 | 1.00 |
| Communication | 2.79 | 0.89 |
| Critical thinking | 2.77 | 0.98 |
| Self-direction | 2.76 | 0.87 |
| Global connections | 2.65 | 0.98 |
| Local connections | 2.57 | 1.00 |

## 4.2. The Role of Teachers' Demographics in Their Use of 21st Century Skills

To answer the second research question which aims to investigate whether teachers' demographic characteristics show a signifinicant difference in their use of 21st century skills, the normality test was run to see if the data is normally or non-normally

distributed. Kolmogorov-Smirnov test of normality was employed because this test is used when the number of data is above 50 (Büyüköztürk, 2005). The results of Kolmogrov-Smirnov test (p=0.200>0.05) indicated that the data of the present study had a normal distribution. Therefore, the relevant parametric test was carried out to answer the related research question. In this regard, one-way ANOVA was administered to see if teachers' years of experience had a significant difference in their use of 21st century skills and independent samples t-test was run to see if teachers' types of school they work, level of education and training on 21st century skills differed significantly in their use of these skills. The findings were presented in the following sections.

### 4.2.1. Anova Results According to Teachers' Years of Experience

In order to find out whether teachers' years of experience made a significant difference in their use of 21st century skills or not, one-way ANOVA test was administered for each sub-skill. Table 11 demonstrates the results related to critical thinking skills teaching practices of teachers. Based on the results, there was a significant difference (p<0.05) among teachers' years of experience in their use of critical thinking skills.

***Table 11.***

*ANOVA Results of Critical Thinking Skills Teaching Practices*

| **Years of experience** | ***N*** | ***M*** | **S.D.** | ***F*** | ***p*** | **Significant Difference** |
|---|---|---|---|---|---|---|
| 0-5years | 40 | 2.85 | 1.018 | 3.887 | .011 | 6-10-11-15, |
| 6-10 years | 34 | 3.14 | .96 | | | 6-10-15+ |
| 11-15 years | 24 | 2.42 | .73 | | | |
| 15+ years | 21 | 2.42 | 1.01 | | | |

LSD test was conducted ( see Appendix 9) in order to see which groups made a significant difference**.** Test results reveal that this difference is due to teachers with 6-10 years of experience and teachers with 11-15 years and 15+ years of experience. It has been determined that teachers with 6-10 years of experience use critical skills (M=3.14) more than teachers with 11-15 years (M=2.42) and 15+ years of experience (M=2.42).

The ANOVA result for the collaboration skills in Table 12 shows that there is a significant difference among the groups ($p<0.05$).

***Table 12.***

*ANOVA Results of Collaboration Skills Teaching Practices*

| **Years of experience** | ***N*** | ***M*** | **S.D.** | ***F*** | ***P*** | **Significant Difference** |
|---|---|---|---|---|---|---|
| 0-5years | 40 | 3.15 | .99 | 4.032 | .009 | 6-10-11-15, |
| 6-10 years | 34 | 3.23 | .95 | | | 6-10-15+ |
| 11-15 years | 24 | 2.66 | .66 | | | |
| 15+ years | 21 | 2,67 | ,71 | | | |

Since Levene, Welch and Brown tests for homogeneity of variances were significant at the 0.05 level, Dunnet T3 multiple comparison test results (see Appendix 9) were interpreted to find the groups that make the difference. Dunnet T3 test results showed that this difference occurs among teachers with 6-10, 11-15 and 15+ years of experience, respectively. Their mean scores indicate that teachers with 6-10 years of experience (M=3.15) employ collaboration skills more often than teachers with 11-15 (M=2.66) and 15+ (M=2.67) years of experience.

The ANOVA results of teachers' practice of communication skills in Table 13 show that teachers' years of experience in using these skills make a significant difference ($p<0.05$).

***Table 13.***

*ANOVA Results of Communication Skills Teaching Practices*

| **Years of experience** | ***N*** | ***M*** | **S.D.** | ***F*** | ***P*** | **Significant Difference** |
|---|---|---|---|---|---|---|
| 0-5years | 40 | 2.75 | .89 | 4.767 | .004 | 6-10-11-15 |
| 6-10 years | 34 | 3.23 | .92 | | | |
| 11-15 years | 24 | 2.45 | .54 | | | |
| 15+ years | 21 | 2.56 | .96 | | | |

Since the homogeneity of the variances was significant at the 0.05 level, the Dunnet T3 comparison test (see Appendix 9) was used to find out from which group this difference originated. The findings unveil that teachers with 6-10 years of experience and teachers with 11-15 years of experience make this difference. Teachers with 6 to 10 years of experience use these skills more often (M=3.32) than teachers with 11-15 years of experience (M=2.45).

ANOVA statistical test results for creativity and innovation skills practices in Table 14 demonstrate that there is no significant difference between the years of experience of teachers using these skills (p> 0.05).

***Table 14.***

*ANOVA Results of Creativity and Innovation Skills Teaching Practices*

| **Years of experience** | ***N*** | ***M*** | **S.D.** | ***F*** | ***P*** |
|---|---|---|---|---|---|
| 0-5years | 40 | 2.94 | .92 | 1.567 | .201 |
| 6-10 years | 34 | 3.07 | 1.13 | | |
| 11-15 years | 24 | 2.58 | .85 | | |
| 15+ years | 21 | 2.63 | 1.05 | | |

Table 15 shows the ANOVA results of teachers' use of self-direction skills practices by years of experience. According to the table, teachers' years of experience do not show a significant difference in using these skills (p>0.05).

***Table 15.***

*ANOVA Results of Self-Direction Skills Teaching Practices*

| **Years of experience** | ***N*** | ***M*** | **S.D.** | ***F*** | ***P*** |
|---|---|---|---|---|---|
| 0-5years | 40 | 2.79 | .87 | 1.621 | .188 |
| 6-10 years | 34 | 2.99 | .96 | | |
| 11-15 years | 24 | 2.59 | .66 | | |
| 15+ years | 21 | 2.53 | .87 | | |

The findings in Table 16 show the ANOVA results of teachers' use of global connections practices according to their years of experience. Based on the findings, the use of these skills by the participants does not show a significant difference according to their years of experience ($p>0.05$).

***Table 16.***

*ANOVA Results of Global Connections Teaching Practices*

| **Years of experience** | ***N*** | ***M*** | **S.D.** | ***F*** | ***P*** |
|---|---|---|---|---|---|
| 0-5years | 40 | 2.70 | .96 | 1.607 | .192 |
| 6-10 years | 34 | 2.88 | 1.03 | | |
| 11-15 years | 24 | 2.33 | .72 | | |
| 15+ years | 21 | 2.53 | 1.14 | | |

The ANOVA results in Table 17 also reveal that teachers' years of experience do not have any significant difference in using local connections teaching practices ($p>0.05$).

***Table 17.***

*ANOVA Results of Local Connections Teaching Practices*

| **Years of experience** | ***N*** | ***M*** | **S.D.** | ***F*** | ***P*** |
|---|---|---|---|---|---|
| 0-5years | 40 | 2.64 | .97 | 1.393 | .248 |
| 6-10 years | 34 | 2.78 | 1.10 | | |
| 11-15 years | 24 | 2.35 | .84 | | |
| 15+ years | 21 | 2.33 | .96 | | |

Finally, Table 18 shows that teachers' use of technology as a learning tool makes a significant difference according to their years of experience ($p<0.05$).

***Table 18.***

*ANOVA Results of Using Technology as a Tool for Learning Teaching Practices*

| Years of experience | *N* | *M* | S.D. | *F* | *P* | Significant Difference |
|---|---|---|---|---|---|---|
| 0-5years | 40 | 3.28 | 1.17 | 2.810 | .043 | 6-10-15+ |
| 6-10 years | 34 | 3.60 | 1.14 | | | |
| 11-15 years | 24 | 3.08 | .87 | | | |
| 15+ years | 21 | 2.73 | 1.21 | | | |

In order to detect which groups cause this difference, LSD multiple comparison test was conducted (see Appendix 9). According to the test results, the mean scores of teachers with 6-10 years of experience and teachers with 15+ years of experience cause a difference. Teachers with 6-10 years of experience (M=3.60) tend to use technology more than teachers with 15+ years of experience (M=2.73).

### 4.2.2. T-Test Results According to Teachers' Types of School They Work, Level Of Education, Training on 21st Century Skills

Within each sub skill of 21st century teaching practices, teachers'background variables (types of school, level of education and training on 21st century skills) are examined whether any of them has a significant difference in the use of these skills by teachers through independent samples t-test statistical analysis.

First, Table 19 shows the significant differences in teachers' use of critical thinking, communication, creativity and innovation, self-direction, global connections, and technology as a tool for learning teaching practices according to the types of schools they work in ($p<0.05$). On the other hand, the findings show that teachers' school types do not have a significant difference in their teaching practices of collaboration and local connections skills ($p>0.05$).

According to the participants' mean score, it can be deduced that critical thinking ($M^{pr}=3.06$, $M^{pub}=2.61$), communication ($M^{pr}=3.20$, $M^{pub}=2.56$), creativity and innovation ($M^{pr}=3.32$, $M^{pub}=2.58$), self-direction ($M^{pr}=3.00$, $M^{pub}=2.67$), global connections ($M^{pr}=2.93$, $M^{pub}=2.49$), and using technology as a tool for learning

($M^{pr}$=3.64, $M^{pub}$=3.01) skills are more frequently included by teachers working in private schools than those who work in public schools. Although mean scores indicate some differences in collaboration ($M^{pr}$=3.21, $M^{pub}$=2,90) and local connections skills ($M^{pr}$=2.76, $M^{pub}$=2.46), there was no statistically significant difference.

***Table 19.***

*T-Test Results According to the Type of School the Teachers Work In*

| **21st century skills** | **Types ofSchool** | ***N*** | ***M*** | ***S.D.*** | ***df*** | ***t*** | ***p*** |
|---|---|---|---|---|---|---|---|
| **Critical Thinking** | **Public** | 76 | 2.61 | .95 | 117 | -2.427 | .017 |
| | **Private** | 43 | 3.06 | .98 | | | |
| **Collaboration** | **Public** | 76 | 2.90 | .93 | 117 | -1.792 | .076 |
| | **Private** | 43 | 3.21 | .85 | | | |
| **Communication** | **Public** | 76 | 2.56 | .87 | 117 | -3.936 | .000 |
| | **Private** | 43 | 3.20 | .79 | | | |
| **Creativity and Innovation** | **Public** | 76 | 2.58 | .89 | 117 | -4.085 | .000 |
| | **Private** | 43 | 3.32 | 1.03 | | | |
| **Self-Direction** | **Public** | 76 | 2.67 | .88 | 117 | -2.322 | .022 |
| | **Private** | 43 | 3.00 | .80 | | | |
| **Global Connections** | **Public** | 76 | 2.49 | .93 | 117 | -2.366 | .020 |
| | **Private** | 43 | 2.93 | 1.01 | | | |
| **Local Connections** | **Public** | 76 | 2.46 | .99 | 117 | -1.634 | .105 |
| | **Private** | 43 | 2.76 | .96 | | | |
| **Using Technology** | **Public** | 76 | 3.01 | 1.13 | 117 | -2.988 | .003 |
| | **Private** | 43 | 3.64 | 1.06 | | | |

It was examined whether the training of teachers for 21st century skills showed a significant difference in the implementation of 21st century skills practices**.** According to the t-test results, except the use of technology as a tool for learning and collaboration skills ($p>0.05$), whether the teachers received any training on 21st century skills teaching practices or not has a significant difference in using these skills ($p<0.05$). Teachers' mean scores indicate that critical thinking ($M^{yes}$=2.98, $M^{no}$=2.49), communication ($M^{yes}$=2.96, $M^{no}$=2.57), creativity and innovation ($M^{yes}$=3.02, $M^{no}$=2.61), self-direction ($M^{yes}$=2.97, $M^{no}$=2.48), global connections ($M^{yes}$=2.81, $M^{no}$=2.42), and local connections ($M^{yes}$=2.73, $M^{no}$=2.35) skills are more widely used by teachers who received training on 21st century skills than who did not.

***Table 20.***

*T-Test Results According to the Training on 21st Century Skills Teachers Received*

| 21st century skills | Training | *N* | *M* | *S.D.* | *df* | *t* | *p* |
|---|---|---|---|---|---|---|---|
| **Critical Thinking** | **Yes** | 69 | 2.98 | 1.01 | 113.785 | 2.835 | .005 |
| | **No** | 50 | 2.49 | .87 | | | |
| **Collaboration** | **Yes** | 69 | 3.13 | .90 | 117 | 1.635 | .105 |
| | **No** | 50 | 2.86 | .90 | | | |
| **Communication** | **Yes** | 69 | 2.96 | .97 | 116.971 | 2.505 | .014 |
| | **No** | 50 | 2.57 | .71 | | | |
| **Creativity and Innovation** | **Yes** | 69 | 3.02 | 1.03 | 117 | 2.225 | .028 |
| | **No** | 50 | 2.61 | .94 | | | |
| **Self-Direction** | **Yes** | 69 | 2.97 | .86 | 117 | 3.148 | .002 |
| | **No** | 50 | 2.48 | .80 | | | |
| **Global Connections** | **Yes** | 69 | 2.81 | 1.00 | 117 | 2.180 | .031 |
| | **No** | 50 | 2.42 | .91 | | | |
| **Local Connections** | **Yes** | 69 | 2.73 | .98 | 117 | 2.085 | .039 |
| | **No** | 50 | 2.35 | .96 | | | |
| **Using Technology** | **Yes** | 69 | 3.37 | 1.18 | 117 | 1.549 | .124 |
| | **No** | 50 | 3.05 | 1.06 | | | |

When it was examined whether the education levels of the participants had a significant difference in using 21st century skills, it was seen that there was no significant difference in using these skills (p>0.05).

***Table 21.***

*T-Test Results According To Education Level of Teachers*

| 21st century skills | Education Level | *N* | *M* | *S.D.* | *df* | *t* | *p* |
|---|---|---|---|---|---|---|---|
| **Critical Thinking** | **BA** | 102 | 2.71 | .93 | 19.276 | -1.285 | .214 |
| | **MA/PhD** | 17 | 3.11 | 1.22 | | | |
| **Collaboration** | **BA** | 102 | 2.98 | .87 | 19.482 | -.973 | .343 |
| | **MA/PhD** | 17 | 3.25 | 1.10 | | | |
| **Communication** | **BA** | 102 | 2.78 | .87 | 117 | -.357 | .722 |
| | **MA/PhD** | 17 | 2.87 | 1.02 | | | |
| **Creativity and Innovation** | **BA** | 102 | 2.82 | .98 | 117 | -.748 | .456 |
| | **MA/PhD** | 17 | 3.02 | 1.14 | | | |
| **Self-Direction** | **BA** | 102 | 2.72 | .86 | 117 | -1.249 | .214 |
| | **MA/PhD** | 17 | 3.00 | .91 | | | |
| **Global Connections** | **BA** | 102 | 2.60 | .98 | 117 | -1.134 | .259 |
| | **MA/PhD** | 17 | 2.90 | .99 | | | |
| **Local Connections** | **BA** | 102 | 2.53 | .96 | 117 | -.921 | .359 |
| | **MA/PhD** | 17 | 2.77 | 1.16 | | | |
| **Using Technology** | **BA** | 102 | 3.21 | 1.13 | 117 | -.612 | .542 |
| | **MA/PhD** | 17 | 3.39 | 1.19 | | | |

## 4.3. Qualitative Results of the Study

Semi-structured interviews were conducted to find out the challenges faced by secondary school English language teachers. As teachers' overall mean scores of each 21st century skill indicate, even the most frequently used skill-using technology as a tool for learning- has 3.23 mean, which indicates teachers use it approximately once or three times a month, and other skills are not addressed so frequently such as on weekly or daily basis. In addition, according to the results of t-tests, it was seen that public school teachers use 21st century skills practices less frequently than private school teachers. The existing literature points out some problems teachers face while integrating 21st century skills, in line with this, the researcher conducted interviews with 26 teachers through Google forms. Eight of them work in private schools while the rest work in public schools. The interview questions were in the participants' mother tongue, Turkish. The answers were translated into English. Obtained data were analysed through content analysis as explained in Chapter III. Findings were presented with reference to the interview questions. Due to confidentiality verification, participants' names are coded as P1, P2, P3, etc. The answers given by the teachers to the interview questions are presented in the following sections.

### 4.3.1 Teachers' Views on the Relationship Between Language Teaching and 21st Century Skills

In the first question, teachers were asked about the place of 21st century skills in language teaching and how these skills were related to English language teaching. The purpose of this question is to warm participants up for upcoming questions and to see if they see 21st century skills as relevant or necessary to teaching English. All of the participants stated that the integration of 21st century skills into English classes is necessary and the reasons for this are presented in Table 22.

***Table 22.***

*Reasons for Including 21st Century Skills in English Language Teaching*

| **Categories** | ***f*** | **%** |
|---|---|---|
| Effective teaching | 24 | 72.7 |
| Keeping up with the age | 9 | 27.3 |
| **Total** | **33** | **100** |

As seen in the table, teachers see the inclusion of 21st century skills in language classes for effective teaching and keeping up with the age. The extracts taken from teachers' responses may shed light on these categories.

*The integration of these skills is very important for the permanence of learning.* (P8-Effective teaching).

*21st century skills are very important for the effective implementation of educational activities. Language is a form of communication and keeping it up to date is essential for learning. Therefore, if we remove these skills, we lose the language.* ( P12-Effective teaching)

*With the effective use of 21st century skills, individuals who speak English gain significant advantages in their professional and daily lives in following the developments both in our country and in the world. In the 21st century, individuals need more than language skills to advance in their education and professional lives. They need to be collaborative, able to handle complex situations, think creatively and critically, and appear confident*. (P2-Keeping up with the age*)*

*The purpose of foreign language teaching is to make our students citizens of the world. The fact that if our students, whom we want to be universal and not be behind the times, do not have such skills, they will be deficient in all areas of life. As in all subjects, 21st century skills especially can not be separated from English classes. These skills exist in real life and in parallel, we need to provide an educational environment where real life is introduced.* (P20- Keeping up with the age)

## 4.3.2. Teachers' In-Service Training Needs

In the second interview question, participants were asked how they integrated 21st century skills into their classes and if they needed in-service training, and if so, in

which areas. The findings obtained from teachers' responses were examined in three categories. First, the 21st century skills that teachers use most are presented, and then the numbers of teachers who need and do not need in-service training are shown. Finally, it is presented in which areas teachers need in-service training.

***Table 23.***

*The Most Widely Addressed 21st Century Skills by Teachers*

| **Categories** | ***f*** | **%** |
|---|---|---|
| Using technology | 11 | 32.3 |
| Collaboration | 10 | 29.4 |
| Critical thinking | 7 | 20.5 |
| Creativity | 3 | 8.9 |
| Communication | 3 | 8.9 |
| **Total** | **34** | **100** |

Consistent with the statistical findings, teachers use technology as a tool for learning more often than other skills. It is followed by collaboration skills. The least mentioned skills in teachers' responses are creativity and communication skills.

Nine participants did not state whether they needed in-service training or not. The answers obtained from the rest are presented in Table 24.

***Table 24***.

*Teachers' Need for In-Service Training*

| **Categories** | ***f*** | **%** |
|---|---|---|
| Those who need in-service training | 15 | 88.2 |
| Those who do not need in-service training | 2 | 11.8 |
| **Total** | **17** | **100** |
| **Areas where teachers need in-service training** | | |
| Activities on 21st century skills | 6 | 46.1 |
| Up-to-date information on 21st century skills | 5 | 38.5 |
| Lesson planning with 21st century skills | 2 | 15.4 |
| **TOTAL** | **13** | **100** |

As presented in the table, the majority of the teachers (%88) stated that they need in-service training on 21st century skills. In addition, some of the teachers specified in which areas they need in-service training. The most needed area is how to apply these skills practically in the lessons, in other words, activities. The quotations extracted from teachers' answers are as follows:

*…As a teacher, I think we need in-service training in every field. It could be in terms of lesson planning and effective activities for 21st century skills.* (P6)

*I prefer to receive in-service training on 21st century activities and skills and to update my knowledge.* (P7)

*I would like to receive in-service training on up-to-date information on 21st century skills.* (P9)

*I definitely need in-service training. Although I scanned foreign sources on this subject, time constraints, increased workload during Covid-19, etc. I couldn't even get online in-service training. I need training on lesson planning, which topics are chosen for which age group, and how to apply them in the lessons.* (P20).

### 4.3.3. Teachers' Challenges Arising from the Curriculum

The participants were asked to evaluate in terms of what aspects of 21st century skills are supported and neglected in the curriculum they teach. Teachers' answers to this question are presented in Table 25.

***Table 25.***

*The Challenges Arising from the Curriculum*

| **Categories** | ***f*** | **%** |
|---|---|---|
| Insufficient curriculum | 11 | 32.4 |
| rote-based curriculum | 7 | 20.6 |
| Curriculum covering some of 21st century skills | 6 | 17.6 |
| Exam-oriented curriculum | 5 | 14.7 |
| Curriculum covering all 21st century skills | 5 | 14.7 |
| **TOTAL** | **34** | **100** |

As Table 25 demonstrates, five of the teachers stated that their current curriculum covers all of the 21st century skills. Four of these teachers work in private schools and do not use the state curriculum, and can choose their own curriculum. Insufficient curriculum means that the curriculum does not include 21st century skills. A rote-based curriculum refers to directing students to memorize things such as grammar rules and vocabulary. Some of the teachers state that the curriculum does not cover all of the 21st century skills mentioned, but only some of them. Participants also pointed out that the curriculum is exam-oriented which means that the sole purpose of this curriculum is to enable students to choose the correct answer in the exam. Excerpts from the teachers' statements are given below.

*In particular, I think our books and units are definitely not sufficient for 21st century skills. Books are inadequate in terms of the information they provide*.(P15-Insufficient curriculum)

*I don't think our curricula or textbooks on which we depend are inclusive of 21st century skills. I think it is based on rote learning and grammar and I do not think it directs students think critically, and even students find curriculum boring* (P7-insufficient – rote-based curriculum)

*The curriculum supports greater use of communication and technology skills. However, I think that critical thinking and creativity are lacking in the curriculum.*(P13-curriculum covering some of 21st century skills)

*Unfortunately, since the curriculum is exam-oriented, I can't see much in terms of 21st century skills. In fact, I can say that there is nothing left in the name of critical and creative thinking in students. The questions are supposedly thought-provoking, but it seems impossible for learners to use their thinking skills unless they memorize certain patterns.* (P19-exam-oriented and rote-based curriculum)

*We try to keep our curriculum as up-to-date as possible and it is designed to prioritize guiding our students to obtain information from reliable sources in a foreign language and to put collaboration and creative thinking at the center of the classroom.* (P1-curriculum covering all 21$^{st}$ century skills)

### 4.3.4. The Effectiveness of Participants' University Education on Teaching 21st Century Skills

In the fourth question, teachers were asked to evaluate their university education in terms of what aspects of the education they received supported and did not support 21st century education. The findings are listed in Table 26.

***Table 26.***

*University Education on 21st Century Skills Teaching*

| **Categories** | ***f*** | **%** |
|---|---|---|
| Adequate university education | 13 | 48.2 |
| Partially adequate university education | 4 | 14.8 |
| Completely inadequate university education | 4 | 14.8 |
| Education that does not fit the real conditions | 3 | 11.1 |
| Lack of practical knowledge | 3 | 11.1 |
| **TOTAL** | **27** | **100** |

Most of the participants stated that their university education included 21st century skills and they were satisfied with the education they received. Some of the participants found their university education partially adequate and stated that their education partially included 21st century skills. On the other hand, some of the participants found university education completely inadequate in teaching 21st century skills. They pointed out that none of these skills was mentioned during their university education. Other quarter of the teachers stated that the education they received at the university was incompatible with the real conditions of their current teaching environments. In addition, the rest stated that the theoretical knowledge was provided, but the practical part was missing. Teachers'own statements are provided below.

*In university education, our professors tried to teach us 21st century skills, and we were shown what kind of activities we could do for our students*.(P20- Adequate university education)

*I have seen the positive effect of learning collaborative communication skills practices from 21st century skills, but I have not seen activities that support technology and creativity skills during my university education.*(P18- Partially adequate university education)

*I did not receive any training in 21st century skills at university.*(P7- Completely inadequate university education)

*We learned a lot about the teaching of 21st century skills in the courses at the university, but when the curriculum was insufficient in this regard, there were problems in the applications.* (P13- Education that does not fit the real conditions)

*Frankly, the education you have received so far after graduation is generally theoretical, but with the in-service training we receive, you learn different methods, different techniques and different activities.* (P3- Lack of practical knowledge)

### 4.3.5. Unconducive Sides of Classroom Environment

The fifth question aimed to reveal whether there were any difficulties that teachers encountered in the classroom environment while integrating 21st century skills. Responses of the participants were categorized as shown in Table 27.

***Table 27.***

*The Challenges in Classroom Environment*

| **Categories** | ***f*** | **%** |
|---|---|---|
| Poor infrastructure | 8 | 29.7 |
| Lack of technological tools and materials | 5 | 18.5 |
| Traditional row order | 4 | 14.8 |
| No challenges | 4 | 14.8 |
| Large class size | 3 | 11.1 |
| Mixed-level students | 2 | 7.4 |
| Inadequate class hours | 1 | 3.7 |
| **TOTAL** | **27** | **100** |

The most mentioned theme was the poor infrastructure in terms of internet and electricity. Lack of technological tools and materials was the second most mentioned theme. Teachers asserted that the materials they needed were missing in the teaching environment. Another category is traditional row-order. Teachers stated that traditional classroom seating arrangement in which students see each other's back is still prevail. On the other hand, four of the teachers stated that there was no problem and three of them work in private schools. Large class size which refers to crowded classroom environments was another theme mentioned by teachers. A small portion of the teachers were dissatisfied with mixed-level students and inadequate class hours. Excerpts from teachers'responses are presented below.

*Since cable, signal, etc. failures due to internet and technological disconnections take a lot of time and disrupt the motivation of children, there were times when I did not open the smart board and I used communication and sharing skills with classical methods many times*.(P18- Poor infrastructure)

*Unfortunately, our school does not have smart boards and computers for students. Projection and laptop use are also limited to the teacher. Activities and materials that develop 21st century skills are not available. Teaching these skills is restricted to teachers' personal interests*. (P20-Lack of technological tools and materials)

*My main problem is that although the classrooms are equipped with all technological and student-oriented facilities, the classroom row-order still continues in the old way. I think that a classroom environment that fully supports 21st century skills should be arranged in such a way that students can communicate comfortably with each other, not classrooms that make students turn their backs on each other*.(P1- Traditional row order)

*Since I work in a private institution, I have no problem with this. In some of my classes, I even ask students to bring a phone or tablet to play games like Kahoot*.(P2-No Problem)

*As a different example, the large number of classes in some classes can turn into a disadvantage when imparting collaboration skills*.(P17- Large class size)

*… Language teaching should be according to the language level (a1 etc.), not according to the grade level. This should be fixed.*(P5- Mixed-level students)

*Sometimes the inadequate class hours can negatively affect our communication, critical thinking and discussion skills.* (P17- Inadequate class hours)

### 4.3.6. Teachers' Views on Institutional Support

Participants were asked in the sixth question if their school administration supported them to teach 21st century skills. Three categories emerged from their responses and they are illustrated in Table 28.

***Table 28.***

*School Administration's Attitudes Towards Including of 21st Century Skills*

| **Categories** | ***f*** | **%** |
|---|---|---|
| Supportive school administration | 15 | 60 |
| Unsupportive school administration | 7 | 28 |
| Support of MoNE | 3 | 12 |
| **TOTAL** | **25** | **100** |

Most of the teachers stated that the attitudes of school administrations towards bringing 21st century skills to their classrooms are positive and that they support teachers at this point. On the other hand, seven of these teachers stated that the school administration was not aware of these skills, instead the administration tended to support the more traditional approach and therefore did not support teachers in teaching 21st century skills. The remaining teachers, on the other hand, did not mention the school administration, but rather stated the support provided by the Ministry of National Education. Their statements are presented as follows:

*My school has always supported me in this topic and tried to help me financially and morally*. (P9- Supportive school administration)

*It cannot be said that the school administration supports this. There are more traditional methods of rote-learning*. (P10- Unsupportive school administration)

*National education has been providing in-service training on this subject recently. I think 21st century skills are cared*. (P13- Support of MoNE)

### 4.3.7. Being a Role Model in Using 21st Century Skills

The purpose of the seventh question is to find out whether teachers are role models in using these skills, because if teachers do not present these skills themselves, it will not be effective on the side of the students. Apart from one teacher, the most of the participants stated that they were role models. The categories are shown in Table 29.

***Table 29.***

*Areas Where Teachers Are Role Models*

| **Categories** | ***f*** | **%** |
|---|---|---|
| Critical thinking | 8 | 25.0 |
| Using technology | 7 | 21.9 |
| Communication skills | 4 | 12.5 |
| Creating a comfortable atmosphere in the classroom | 4 | 12.5 |
| Creativity | 3 | 9.4 |
| Collaboration skills | 2 | 6.3 |
| Explaining 21st century skills | 1 | 3.1 |
| Concretization of skills | 1 | 3.1 |
| Creatinng a free classroom atmosphere | 1 | 3.1 |
| The teachers who is not a role model | 1 | 3.1 |
| **TOTAL** | **32** | **100** |

While most of the teachers stated that they used some 21st century skills to be a role model, others stated that they created a comfortable environment where students felt free and could express their feelings and thoughts easily. The relevant quotations are given below.

*Critical thinking. I add novelty to writing and grammar. I like to think.*(P5-Critical thinking)

*I'm trying to bring together a blended learning approach that combines classroom-based and online learning. In addition to original communication techniques, I use dynamic teaching methods that include subjects and themes that I have covered from different educational platforms based on advanced technology*.(P2- Using technology)

*I try to show that I value their opinions, feelings and thoughts. I try to chat between classes and help them express themselves comfortably so that they can always be themselves without fear of criticism.*(P9- Creating a comfortable atmosphere in the classroom)

## 4.3.8. Additional Comments of Teachers

At the end of the interview questions, the participants were asked if they had anything to add. Six teachers answered this question. Below are additional comments from the participants.

***Table 30.***

*Teachers' Additional Comments*

| **Categories** | ***f*** | **%** |
|---|---|---|
| Teachers' training needs | 3 | 50.0 |
| Increasing the awareness of school administration | 1 | 16.6 |
| Insufficient readiness of the student | 1 | 16.6 |
| Curriculum deficiencies | 1 | 16.6 |
| **TOTAL** | **6** | **100** |

Three of the teachers emphasized the importance of in and pre-service training of teachers because they thought that they did not have enough practical knowledge about 21st century skills. The unawareness of the school administration about teaching these skills was handled by a teacher. It was also stated that students were not ready to acquire 21st century skills. As mentioned earlier, curriculum deficiency in terms of integrating these skills into lessons was also mentioned.

*There should be a separate course on this subject in universities, teachers can be encouraged to take necessary steps.*(P14-Teachers' training needs)

*First of all, we need to broaden the vision of administrators and teachers. Teachers who feel alone in the field cannot achieve this.*(P20- Increasing the awareness of school administration)

*There is no efficient curriculum in Turkey for language education, we cannot go beyond certain patterns, especially because of exam English, we have some problems at this point. Unfortunately, we do not teach these skills*.(P24-Curriculum deficiencies)

# CHAPTER 5: DISCUSSION

## 5.1.Introduction

The main purpose of the current study was to investigate to what extent secondary school English language teachers' use of 21st century skills and whether their demographic features (years of experience, types of school, training on 21st century skills, education level) show a significant difference in the teaching of these skills. In addition, the secondary aim of the study was to reveal the challenges faced by teachers in applying 21st century skills in their classrooms. A mixed-methods research design was conducted in order to best answer the research questions in accordance with the aims of the research. 119 teachers participated in the quantitative part of the study and 26 teachers participated in the qualitative part. The findings of the study have been categorized according to the research questions and will be discussed in line with the research questions and the existing literature. The research questions are as follows:

1. To what extent do secondary school English language teachers integrate 21st century skills into their teaching practices?
    a. To what extent do secondary school English language teachers use critical thinking, collaboration, communication, creativity and innovation, self-direction, global connections, local connections, and using technology as a tool for learning skills?
2. Do secondary school English language teachers' 21st century skills practices significantly differ according to their years of experience, the type of school they work, the level of education and whether they received training on the skills?
3. What are the challenges faced by secondary school English language teachers when applying 21st century skills?

## 5.2. Secondary School English Language Teachers' 21st Century Skills Teaching Practices

In order to answer the first research question, the scale called 21st Century Skills Teaching and Learning developed by Hixson et al. (2012) was carried out with the participation of 119 Secondary school English language teachers. The teachers' practices were measured under eight 21st century skills; critical thinking, collaboration, communication, self-direction, global connection, local connection and using technology as a tool for learning. According to the findings, the mean scores of teachers' practices ranged between 3.23 and 2.57, and as the mean score for the entire scale indicates, teachers integrated 21st century skills approximately once or three times a month, but some skills had a central role and others were underestimated.

Among the aforementioned 21st century skills, the skill most used by teachers in practice is using technology as a tool for learning (M=3.23). The findings of the quantitative data are consistent with the findings of the qualitative data. In the qualitative data, it was determined that the teachers gave the most place to using technology in their teaching practices. The findings are not surprising because as mentioned earlier in Chapter 2, advances in ICT have changed the way people work and acquire knowledge, with the result that the incorporation of technology into the teaching environment has become an indispensable and quintessential tool for 21st century teaching and learning (Trilling & Fadel, 2009; Voogt et al., 2013). Upon recognizing the importance of technology use in education, MoNE made some attempts to integrate technology into schools such as FATİH (Fırsatları Artırma ve Teknolojiyi İyileştirme Hareketi-The Movement to Increase Opportunities and Improve Technology, 2012). In addition, MoNE stated in its 2023 vision report that the qualifications of teachers continue to be increased and digital course contents will be enriched (MoNE, 2018). Similar results were encountered in other studies as well (Ekinci, 2019; Gürültü, Aslan, & Alcı, 2019; Otlu, 2020; Şahin, 2021). In a study by Otlu (2020), in which English language teachers' practices of 21st century skills were investigated, it was determined that the 21st century skill that teachers practiced the most was using technology as a tool for learning. Similarly, in their results, Gürültü et al. (2019) found that techno-pedagogical skills of

secondary school teachers were among the most frequently used 21st century skills. However, there are also studies in the literature that contradict the findings of the present study (Ahmad, Yoke, Yunos, & Amin, 2019; Ghamrawi, Ghamrawi, & Shal, 2017; Hardiman, 2020; Tindowen, Bassig, & Cagurangan, 2017; Wattanavorakijkul, 2019; Wilcox et al., 2017). In the study conducted by Hardiman (2020), it was revealed that although all schools have access to technology, primary and secondary school teachers do not teach students how to develop technology skills suitable for the 21st century. These contradictions may result from the lack of in-service training necessary for teachers to use technology effectively in practice as mentioned by Hardiman (2020). Other reasons may be poor infrastructures and inaccessibility of technology, as reported in the qualitative data findings of the current study and the study by Anderson (2020).

Local connections is the least addressed skill by secondary school English language teachers (M=2.57). Compatible with this result, Otlu (2020) found that English language teachers gave the least importance to local connection skills. In a similar vein, Ghamrawi et al. (2017) unveiled that Lebanese secondary school teachers' one of the most infrequently addressed 21st century skills is local connections. Some other studies confirm these findings (Gürültü et al., 2019; Hardiman, 2020; Rice, 2017; Tindowen et al., 2017; Wattanavorakijkul, 2019). The findings of the qualitative data of the current research also showed that none of the teachers mentioned local connections teaching practices. According to Yang (2010), practicing local connection skills is essential because local settings heighten students' engagement due to the familiarity of the topics. Cheng (2002) indicated that teachers should emphasize the value of content anchored in a cultural context or a local environment when teaching a certain topic. The integration of this skill can be achieved with the cooperation of society and schools in achieving certain goals (Rice, 2017).

Apart from using technology as a tool for learning and local connections skills, it is important to underline that participants attempt to employ collaboration skills in the second order (M=3.01). The answers given by the teachers to the scale and the answers given to the interview questions are consistent. The findings of the qualitative data show

that collaboration ranks second in teaching practices. In a similar study conducted by Otlu (2020) on 181 English teachers in Turkey, collaboration was found in the second most used skills of the 21st century. Ekinci (2019), on the other hand, in his study on English language lecturers, found that collaboration is one of the least discussed skills among 21st century skills. This indicates that the participants of the current study attach importance to collaboration skills in their practices. For the remaining skills, teachers mean scores range between 3.23 and 2.56 which is above the average on a 5-point Likert scale. This result contrasts with Ghamrawi et al. (2017). In their study on 667 middle and secondary school teachers in Lebanon, they found that teachers' 21st century skills practices mean scores range between 2.46 and 1.28 which is below the average on a 5-point Likert scale.

As a conclusion, it is apparent that teachers' mean scores demonstrate some differences and they practice some skills more often than others. However, mean scores also show that teachers of the present study practice 21st century skills to some extent.

## 5.3. Discussion on Significant Differences in Teachers' Demographic Characteristics in 21st Century Skills Teaching Practices

The second research question aimed to investigate whether the demographic variables of the participants showed a significant difference on teachers' use of 21st century skills. In this regard, the functions of demographic features of teachers in 21st century skills practices are discussed respectively.

### 5.3.1 The Role of Teachers' Years of Work Experience in 21st Century Skills Teaching Practices

The findings of the study show that teachers' 21st century skills practices differ according to years of experience in these skills; critical thinking, collaboration, communication and technology. Based on the post-hoc analysis, those with 6-10 years of experience apply these skills more than those with 11-15 and 15+ years of experience. In a study run by Korkmazgil (2015) on English language teachers unveiled that even though teachers had a positive perception about the pedagogical use of technology in language classes, teachers' years of experience showed a difference, less experienced teachers

being more comfortable with technology. In a similar vein, Şahin (2021) found that English teachers with higher years of experience reported more problems with using technology in the classroom. Embi (2007) attributed this situation to staying away from age-related technology and put forth that those who see themselves away from information technologies are older teachers. Also, Kavukçu's (2021) research, which was conducted with the participation of 151 science teachers to examine 21st century skills, revealed that there is a significant difference between science teachers' knowledge, media and technology skills and their years of experience. However, Kavukçu (2021), contrary to the current study, uncovered that those with 16 years or more experience have higher knowledge, media and technology skills than those with 6-10 years of experience. Contrary to these studies, there are also studies that do not find a significant difference between teachers' 21st century skill use and their length of service (Gürültü et al., 2019; Kaçar, 2020; Otlu, 2020). The research conducted by Kaçar (2020) with 190 English language teachers showed that teachers' years of experience did not show a significant difference in 21st century learning and innovation skills. Otlu (2020), in her study on English language teachers, also found that teachers' years of experience did not show a significant difference in the use of 21st century skills.

### 5.3.2. The Role of the Types of Schools Teachers Work in 21st Century Skills Teaching Practices

The results of the study revealed that teaching in public or private schools showed a significant difference in teachers' 21st century skills teaching practices. These differences were found in the following skills; critical thinking, communication, creativity and innovation, self-direction, global connections and using technology as a tool for learning. It was uncovered that teachers working in private schools applied these skills more than public school teachers. The qualitative data also support this finding that private school teachers stated no problem about classroom environment and curriculum. It is seen that private school teachers have better opportunities and freedom in choosing their own materials. Also, teachers who put forth the challenge arising from infrastructure and crowded classrooms are all from public schools. It is evident that this difference is probably due to the conditions of the teachers. Similarly, Otlu (2020) found that teaching

in a public or private school differs significantly in English language teachers' teaching practices of 21st century skills, and her research also confirms that private school teachers use these skills more than public school teachers. One of the reasons is that private school teachers invest more in their professional development than public school teachers as confirmed by Babanoğlu and Yardımcı (2017). In their studies with 90 English language teachers, it was found that private school teachers are more concerned about their professional development than public school teachers, which could be because private schools are more forceful competitive and ambitions for profit educational business entities, and they are more likely to motivate their employees to be innovate, be responsible, and use sophisticated language teaching approaches. The research by Butt and Kausar (2010) also showed that private school teachers use more differentiated instructions than public school teachers. As the researchers stated, this difference is due to problems such as overcrowded classrooms, lack of training of teachers, and lengthy syllabus. Rahimi and Nabilou (2011) also confirm these findings with their study on 83 high school English language teachers that private school teachers' quality of teaching English is higher than public school teachers. They also stated that this may be due to the following factors in public schools; crowded classrooms, lack of technological tools, class hours, and low motivation of students.

Overall, the findings of this study show that private school teachers practice 21st century skills more than public school teachers. Similar studies cited in this section confirm the findings of this conclusion. As data from this study and other studies show, this difference may be due to poor conditions in public schools, lack of teacher training, class hours, and lengthy syllabus.

### 5.3.3. The Role of 21st Century Skills Training in 21st Century Skills Teaching Practices

The findings of this research showed that whether teachers received training on 21st century skills or not differs significantly in these skills of in 21st century teaching practices; critical thinking, communication, creativity and innovation, self-direction,

global and local connections. According to the findings, those who received training on 21st century skills apply these skills more than those who did not. Similarly, Kaçar (2020), in his study with 190 English language teachers, found that teachers who attended a training on 21st century skills have more favorable perception about 21st century innovation skills than those who did not. Experimental research conducted by Yeni (2018) with 33 English teachers showed that receiving 21st century skills training affects teachers' teaching practices and perceptions.

Professional development, according to Jackson and Andrews (2000), is a vital task for teachers that they can engage in both inside and outside of their teaching contexts to increase their knowledge, awareness, and practices of the skills. In addition, Chai and Kong (2017) argued that professional development is a critical factor for the transformation of education in this age. 21st century professional development is among five key support systems of P21 to ensure that all students acquire 21st century skills. It is clear that providing professional development in 21st century skills is one of the key elements in changing educators' perception of teaching and practices.

### 5.3.4. The Role of Teachers' Education Level in 21st Century Skills Teaching Practices

The findings revealed that the education levels of the participants did not show a significant difference in 21st century skills teaching practices. In other words, the fact that teachers are undergraduate or graduate/doctoral graduates is not a factor in 21st century skill teaching practices. Anderson (2020)**,** in her study of 135 English teachers in Turkey, revealed that teachers' educational backgrounds do not differ in their perceptions and practices of 21st century skills. Şahin (2021), in his study in which he measured technological competency levels of 303 English language teachers, revealed that teachers' undergraduate or graduate degrees did not make a difference in their use of technology. A similar result was found in a study by Kavukçu (2021) on 151 science teachers, and it was determined that the self-efficacy perceptions of science teachers regarding 21st century skills did not show a significant difference according to their educational status. Also, Cemaloğlu, Arslangilay, Üstündağ, and Bilasa (2019), in their

study on 38 vocational high school teacher from different branches, found that there is no significant difference between the education levels of vocational high school teachers and their self-efficacy perceptions regarding 21st century skills.

In contrast to the result of the current study, Otlu (2020)'s findings suggest that the educational backgrounds of English teachers differ significantly in 21st century skills practices, but this difference is only found in global connections skills. Another study by Çelebi and Sevinç (2019), in which the self-efficacy perceptions and 21st century skills use levels of 130 secondary school teachers from different branches were examined, also revealed that teachers who received postgraduate education have higher efficacy perceptions regarding 21st century skills.

In the literature, it is seen that there are different results between teachers' educational background and 21st century skills perceptions and practices. The difference in this study may be due to the fact that 86% of the teachers have a bachelor's degree and only 14% have a master's or doctorate degree.

## 5.4. The Challenges Faced by Secondary School English Language Teachers

Semi-structured interviews were conducted to reveal the challenges experienced by teachers while integrating 21st century skills. All teachers stated that 21st century skills must be incorporated into language teaching for keeping up the age or effective teaching. Similar results were seen in the literature (Eker, 2020; Ekinci, 2019; Kaçar, 2020; Orak, 2019) that English language teachers acknowledge the important place of 21st century skills in language teaching. However, they also noted the challenges of trying to include these skills. One of the challenges is the lack of in-service training. The majority of teachers (88%) stated that they needed in-service training on 21st century skills, and more specifically, they mostly needed activities and up-to-date information about these skills. Other studies in the literature also confirm that teachers lack in-service training on 21st century skills (Anderson, 2020; Eker, 2020; Hardiman, 2020; Kaçar, 2020; Korkmazgil, 2015; Pilpe, 2020; Stover, 2018). Eker (2020), in her research on

English language teachers, highlighted that even though teachers' mean scores were high in knowledge and awareness of the 21st century learning and innovation skills, teachers emphasized the lack of experience and training to improve their knowledge and practices of the 21st century skills. In addition, Korkmazgil (2015) found that only 127 ELT-specific in-service training programs have been established by MoNE for EFL teachers in the last 10 years, out of a total of 6516 in-service training programs. Therefore, it is clear that training for teachers is not sufficient and the results indicating the need for in-service training is reasonable. Also, when asked which 21st century skills they include in the classes, teachers mostly stated using technology. Similarly, Wattanavorakijkul (2019) conducted a study of Thai English language teachers and found that technology is the most used 21st century skill among others, according to him, it is a common belief by teachers and others in the community that 21st century skills are anything to do with technology. Other skills which are most used by teachers are collaboration (29%) and critical thinking (20%). Although these skills are compatible with 21st century skills, none of the teachers mentioned other high-level skills such as self-direction, global connections and local connections. These results show us that teachers need in-service training about these skills to heighten their awareness and alter their teaching practices. Admittedly, in order to ensure that teachers are equipped to improve instructional methods and change learning, effective professional development is critical (Tour, 2017).

Another problem raised by teachers is that the curriculum is insufficient to cover 21st century skills. Only five teachers stated that the curriculum is sufficient to cover these skills, and four of these teachers work in private schools. As private school teachers noted, this is due to the freedom to choose their own books and curriculum. In addition, teachers claimed that curriculum and books are mostly based on rote-learning and exam-oriented. Other studies in the literature also present similar results (Güvendir, 2017; Hardiman, 2020; Kaçar, 2020; Korkmazgil, 2015; Orak, 2019). In addition, Elgün (2021)'s study uncovered that the 8th grade English textbook contains a very limited part of 21st century skills, accordingly, the curriculum should be developed and 21st century skills should be included in books more. Also, Bedir (2017) pointed out in his study that despite their curiosity and willingness to integrate 21st century skills into their teaching,

limited curricular requirements and a tight culture of test-based assessment prohibit educators from developing implementations of these skills. Korkmazgil (2015) also stated that the redesigned curriculum that promotes communicative language approaches in teaching conflicts with the discrete assessment approach that focuses on grammatical accuracy in national exams. From this point of view, although the curriculum covers some parts of 21st century skills, it can be said that teaching these skills by teachers is mostly lacking and exam-oriented teaching has a large share in this. It is coherent that the lack of emphasis on 21st century skills in the curriculum leads to poor classroom applications of these skills by teachers (Voogt et al., 2013).

When participants were asked to evaluate the effectiveness of their university education in teaching 21st century skills, almost half of the teachers (48%) stated that they had an adequate university education. However, the remaining half stated that they had the following problems with their university education; completely inadequate university education in teaching these skills, education that does not fit real conditions and theory-based training. Similar result was found in Güvendir (2017)'s study on 30 beginning English teachers that university education is inadequate in terms of fitting real conditions of teachers. Similarly, the teachers of the current study stated that they received education on 21st century skills, however, they are not capable of infusing these skills into language teaching because of the curriculum and conditions of the school. In addition, teachers emphasized that they did not receive any training on 21st century skills at the university. As Wagner (2008) asserted, the curriculum in college is information-based and the goal is to acquire knowledge first, hence; the most of the students in college need remedial coursework regarding 21st century skills. Ghamrawi et al. (2017) and Pilpe (2020) also concluded in their studies that teacher training programs need a revision in terms of 21st century skills, since teachers are trained from 20th century teaching paradigms. In line with this information, the reasons why teachers did not receive training on 21st century skills at university may be the inadequacy of the curriculum and 20th century teaching paradigm, which obviously creates a challenge for current teachers in weaving 21st century skills to the lessons.

Most of the teachers also stated some challenges arising from the classroom environment in terms of poor infrastructure, lack of technological tools and materials and large class size. Kaçar (2020) also uncovered in his study that English language teachers have problems with poor infrastructure and access to the internet and this affects their effective teaching. Another study by Korkmazgil (2015) found that English language teachers working in public schools suffer from lack of necessary materials and crowded classrooms. Similar studies support these findings (Anderson, 2020; Rice, 2017; Şahin, 2021). The availability of necessary technological tools and infrastructure is important because as Khawaji (2016) pointed out that there was an important correlation between technology integration and teachers' access to computers and resources, the stage of the implementation process, and the use of technology and competence level. Reaching similar findings in his research, Kiper (2008) states that the lack of infrastructure related to information technologies in schools negatively affects teachers' effective teaching.

More than half of the participants (60%) stated that their administrators supported the teaching of 21st century skills. In a similar vein, Pilpe (2020) in her study of 81 secondary school teachers, also found that teachers' schools supported developing 21st century skills. However, the rest of the participants emphasized that school administrators were not supportive in teaching 21st century skills and they were more inclined to traditional teaching. Similarly, Hardiman (2020) in her study on middle school teachers also unveiled that administrators were not familiar with 21st century skills and they were not ensuring that these skills were applied across their campuses. She also found that administrators were not providing professional development. Orak (2019) also put forth in her study that English language lecturers are prepared to practice and increase the implementation of 21st century skills in their classes when they have support from the administrators in terms of organizing professional development processes and adapting syllabuses to fill the teachers' gaps about 21st century skills. The teachers in Wilcox et al.'s (2017) study also stated that lack of institutional support prevents teachers from integrating new technology and strategies into their classes. It is seen that the unsupportive attitudes of the administrators and their unfamiliarity with 21st century skills challenge the teachers.

When the teachers were asked whether they were role models in 21st century skills, all but one gave a positive answer. Responses showed that teachers are mostly role models for critical thinking, using technology, and communication skills. According to Pilpe (2020), teachers should be able to model skills to their students in order to effectively teach 21st century skill development. Also, Karakaş (2015) suggested that teachers must be able to represent good role models as teachers of the 21st century. It is noteworthy that teachers stated that they create a comfortable environment in their lessons as well as being role models in 21st century skills to make their learners feel safe. A comfortable classroom environment is important for learners to demonstrate a willingness to explore and experience skills with confidence. Similarly, Kaçar (2020) has also found that English language teachers are willing to provide encouraging atmospheres that allow their students to explore and question 21st century skills.

Based on the findings, it is conceivable to conclude that there is a misalignment between the MoNE's policy and teachers' current teaching practices due to some practical reasons. Whereas MoNE (2013) supports the integration of 21st century skills into lessons, teachers do not devote enough time or attention promoting these skills effectively.

# CHAPTER 6: CONCLUSION AND SUGGESTIONS

This chapter will conclude the study by reviewing the main findings regarding the research objectives and questions, as well as their importance and contribution. It will also review the limitations of the study, make implications, and suggestion for further studies.

## 6.1. Conclusion

The current study aimed to investigate to what extent secondary school English language teachers applied 21st century skills in the lessons and whether there was a difference in the application of these skills according to demographic variables. Both scale and semi-structured interviews were conducted to achieve the aims of the study. While the findings of the scale were analyzed with descriptive statistics as well as one-way Anova and independent samples t-test, the findings of the interviews were analyzed with content analysis.

The results related to the first research question indicated that teachers integrate 21st century skills approximately once or three times a month into their teaching practices, and some skills were addressed more while others were addressed less frequently. Using technology as a tool for learning is the most used 21st century skill by teachers and this finding is also compatible with the findings of the interviews. On the other hand, local connections skills are the least addressed skill by the teachers. Qualitative data findings also supported this result that teachers did not mention local connections when asked which 21st century skills they use in their classes.

In relation to the first research question, the second question of the study aimed to unveil whether teachers' demographic variables (years of experience, the type of school they work, the level of education and whether they received training on the skills) differ in their use of 21st century skills. Relatedly, it was found that teachers with less years of experience apply these skills more than those with more years of experience. Another variable that differs in the use of 21st century skills is the type of school teachers work

in. Accordingly, t-test results showed that private school teachers weave these skills more than public schools teachers, except local connections.

One of the most important findings of the study is the significant role of professional development on 21st century skills. It was found that teachers who received training on 21st century skills employ these skills more than those who did not. This result illustrates how valuable training is in integrating 21st century skills into lessons. On the other hand, the education levels of teachers did not show a significant difference in employing these skills.

The last research question was related to the challenges teachers face in using 21st century skills in the lessons. The findings of the qualitative data uncovered that the lack of in-service training, poor requirements of the curriculum, inadequate university education, poor infrastructure and lack of materials, and attitudes of administrations were some of the challenges stated by teachers.

Although it is highly crucial to cultivate 21st century skills from early years in education (Orak, 2019; Zivkoviç, 2016), there is a scarcity of studies investigating the integration of 21st century skills into lessons, especially English language lessons. In this regard, the findings of the present study provided more information about the current situation of secondary school English language teachers in employing 21st century skills and the challenges they face in classrooms, and thus tried to fill the gap in the literature. Therefore, policy makers, curriculum designers, school administrators, teachers trainers, and teachers will be able to benefit from the results of the current study.

## 6.2. Implications

As mentioned in earlier chapters, the integration of 21stcentury skills into lessons is highly crucial for nations to function and thrive effectively in this era. Teachers' current practices are the indicators whether these skills are included or not. In line with

this, the findings of the present study shed a light on this matter and have some implications to consider.

It was seen that whereas teachers addressed some skills more (e.g. using technology and collaboration etc.), other high-order skills such as local and global connections were addressed less frequently. As teachers emphasized in the interviews, there is a lack of in-service training on 21st century skills and the curriculum is not comprehensive and adequate to highlight and include these skills. In this regard, to heighten the awareness of teachers and increase the integration of these skills, in-service training should be provided because it was seen that teachers who received training on 21st century skills infused these skills more. Also, as P21 (2017) suggests as well, 21st century skills should be included more intensively and comprehensively in the curriculum and curriculum designers should set objectives accordingly. Relatedly, the exam-oriented approach of the books and curriculum was another issue cited by teachers. As Wagner (2008) indicates assessment is the foundation of 21st century skills, and what you test is what you receive. He also suggests that quality instructional practice is driven by assessment. Accordingly, assessments should comprehensively include 21 century skills and focus more on process.

The findings showed that teachers with less years of experience practice 21st century skills more than more years of experience. At this point, it is advisable that teachers with less years of experience and more years of experience should collaborate on how these skills can be infused in classrooms, and also teachers with more years of experience should update their knowledge and teaching practices through professional developments.

The results of the quantitative data illustrated that private school teachers use 21st century skills more than public school teachers. Based on the findings obtained from the qualitative data, it can be suggested that the conditions of public school teachers should be equated with private school teachers in terms of classroom environment and

materials. Need-analysis should be done, necessary materials should be provided and poor infrastructure should be fixed.

Some of the teachers also mentioned the inadequacy of their university education in terms of teaching 21st century skills. As highlighted by Pilpe (2020), it is crystal clear that teachers who were themselves educated from the teaching paradigm of the 20th century can not teach these skills, hence the faculty of education has an important role to introduce 21st century skills and teach how to infuse them into lessons.

In addition to teachers, the awareness of school administrators should be increased and their attitudes should be altered through professional developments provided by MoNE. It needs to be assured that they support teachers in integrating 21st century skills with necessary control.

## 6.3. Limitations

The present study is limited to 119 secondary school English language teachers and it was conducted during 2020-2021 academic years in İstanbul, Turkey. The participants were selected from non-probability sampling methods by convenience and snowball sampling. Therefore, its findings cannot be generalized to the entire population and different sample sizes and time may yield different results. Also, since both the quantitative and qualitative data were obtained digitally via Google forms, there was no chance to interact with participants face- to-face to answer their potential questions. Additionally, this study is limited to 21st Century Teaching and Learning scale (Hixson et al., 2012) and the interview questions developed by the researchers. Different measuring tools may produce different findings.

## 6.4. Suggestions for Further Studies

The present study was applied to a limited number of participants by convenience and snowball sampling, so further studies should reach more participants

with one of the probability sampling methods to reduce the probability and extend the generalizability of the results.

Although the e-mail interviews have some benefits and was used in this study, future studies can conduct face-to-face interviews to get more comprehensive responses and ask participants more follow-up questions.

This study investigated the use of 21st century skills by teachers. Upcoming researchers can focus on the student side and use classroom observations to deepen the study. Also, as mentioned in previous sections, teaching 21st century skills from the very early years of education is a key factor, so the status of 21st century teaching in primary schools should be explored.

The current study has uncovered that some skills were less addressed by teachers, hence future researchers can investigate underlying causes more specifically and explore teachers' awareness of these skills.

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# APPENDICIES

## Appendix 1. Consent Form for 21st Century Teaching and Learning Scale

Dear Participant,

The goal of this survey is to find out secondary school English language teachers' 21st century skills practices. The obtained data from the survey will be evaluated based on the demographic variables within the scope of the thesis titled " The Use Of 21st Century Skills By Secondary School English Language Teachers And The Challenges They Face" conducted by Yeliz Bolat under the direction of the thesis committee chaired by Dr.Selma Deneme. Participation in the study must be on a voluntary basis. Your answers will be kept strictly confidential and evaluated only by the researcher. During participation, for any reason, if you feel uncomfortable, you are free to quit at any time. You are expected to mark the answers that reflect your teaching. If you agree to participate, please tick the box below.

Thank you in advance for your contribution.

Contact:

I am participating in this study of my own will and I give my consent for the use of the information I provide for scientific purposes.

**Yes** ☐

# Appendix 2. 21st Century Teaching and Learning Scale

## Part I.Demographic Information

**1.How long have you been teaching English?**

0-5 ☐ , 6-10 ☐, 11-15 ☐ , 16-20 ☐ , 20+☐

**2.Have you received any training on 21st century skills?**

Yes ☐, No ☐

**3. What kind of school do you teach at?**

Public School ☐, Private School ☐

**4. What is your degree of education?**

Bachelor's Degree ☐, MA/PhD ☐

## Part II.21st Century Teaching and Learning Scale

**Instructions**

The rest of this survey asks about your teaching practices that might support students' learning of the following 21st century skills.

Critical Thinking
Collaboration
Communication
Creativity & Innovation
Self-Direction
Making Global Connections
Making Local Connections
Using Technology as a Tool for Learning

For each of the above you will be asked about your general teaching of these skills, and about a few specific practices you may have used.

There are no correct or incorrect answers and all responses will be kept confidential.

**CRITICAL THINKING SKILLS refer to students being able to analyze complex problems, investigate questions for which there are no clear-cut answers, evaluate different points of view or sources of information, and draw appropriate conclusions based on evidence and reasoning**

**1. Here are some examples of practices that may help students learn CRITICAL THINKING SKILLS.**

| In your teaching of your TARGET CLASS, how often have you asked students to do the following | Almost never | A few times a semester | 1-3 times per month | 1-3 times per week | Almost daily |
|---|---|---|---|---|---|
| a. Compare information from different sources before completing a task or assignment? | O | O | O | O | O |
| b. Draw their own conclusions based on analysis of numbers, facts, or relevant information? | O | O | O | O | O |
| c. Summarize or create their own interpretation of what they have read or been taught? | O | O | O | O | O |
| d. Analyze competing arguments, perspectives or solutions to a problem? | O | O | O | O | O |
| e. Develop a persuasive argument based on supporting evidence or reasoning? | O | O | O | O | O |
| f. Try to solve complex problems or answer questions that have no single correct solution or answer? | O | O | O | O | O |

**COLLABORATION SKILLS refer to students being able to work together to solve problems or answer questions, to work effectively and respectfully in teams to accomplish a common goal and to assume shared responsibility for completing a task.**

**1. Here are some examples of practices that may help students learn COLLABORATION SKILLS.**

| In your teaching of your TARGET CLASS, how often have you asked students to do the following | Almost never | A few times a semester | 1-3 times per month | 1-3 times per week | Almost daily |
|---|---|---|---|---|---|
| a. Work in pairs or small groups to complete a task together? | O | O | O | O | O |
| b. Work with other students to set goals and create a plan for their team? | O | O | O | O | O |
| c. Create joint products using contributions from each student? | O | O | O | O | O |
| d. Present their group work to the class, teacher or others? | O | O | O | O | O |
| e. Work as a team to incorporate feedback on group tasks or products? | O | O | O | O | O |
| f. Give feedback to peers or assess other students' work | O | O | O | O | O |

**COMMUNICATION SKILLS refer to students being able to organize their thoughts, data and findings and share these effectively through a variety of media, as well as orally and in writing.**

**1. Here are some examples of practices that may help students learn COMMUNICATION SKILLS.**

| In your TARGET CLASS, how often have you asked students to do the following | Almost never | A few times a semester | 1-3 times per month | 1-3 times per week | Almost daily |
|---|---|---|---|---|---|
| a. Structure data for use in written products or oral presentations (e.g., creating charts, tables or graphs)? | O | O | O | O | O |
| b. Convey their ideas using media other than a written paper (e.g., posters, video, blogs, etc.) | O | O | O | O | O |
| c. Prepare and deliver an oral presentation to the teacher or others? | O | O | O | O | O |
| d. Answer questions in front of an audience? | O | O | O | O | O |
| e. Decide how they will present their work or demonstrate their learning? | O | O | O | O | O |

**CREATIVITY AND INNOVATION SKILLS refer to students being able to generate and refine solutions to complex problems or tasks based on synthesis, analysis and then combining or presenting what they have learned in new and original ways.**

**1. Here are some examples of practices that may help students learn CREATIVITY AND INNOVATION SKILLS.**

| In your teaching of your TARGET CLASS, how often have you asked students to do the following | Almost never | A few times a semester | 1-3 times per month | 1-3 times per week | Almost daily |
|---|---|---|---|---|---|
| a. Use idea creation techniques such as brainstorming or concept mapping? | O | O | O | O | O |
| b. Generate their own ideas about how to confront a problem or question? | O | O | O | O | O |
| c. Test out different ideas and work to improve them? | O | O | O | O | O |
| d. Invent a solution to a complex, open-ended question or problem? | O | O | O | O | O |
| e. Create an original product or performance to express their ideas? | O | O | O | O | O |

**SELF-DIRECTION SKILLS refer to students being able to take responsibility for their learning by identifying topics to pursue and processes for their own learning, and being able to review their own work and respond to feedback.**

**1. Here are some examples of practices that may help students learn SELF-DIRECTION SKILLS.**

| In your teaching of your TARGET CLASS, how often have you asked students to do the following | Almost never | A few times a semester | 1-3 times per month | 1-3 times per week | Almost daily |
|---|---|---|---|---|---|
| a. Take initiative when confronted with a difficult problem or question? | O | O | O | O | O |
| b. Choose their own topics of learning or questions to pursue? | O | O | O | O | O |
| c. Plan the steps they will take to accomplish a complex task? | O | O | O | O | O |
| d. Choose for themselves what examples to study or resources to use? | O | O | O | O | O |
| e. Monitor their own progress towards completion of a complex task and modify their work accordingly? | O | O | O | O | O |
| f. Use specific criteria to assess the quality of their work before it is completed? | O | O | O | O | O |
| g. Use peer, teacher or expert feedback to revise their work? | O | O | O | O | O |

**GLOBAL CONNECTIONS refers to students being able to understand global, geo-political issues including awareness of geography, culture, language, history, and literature from other countries.**

**1. Here are some examples of practices that may help students learn to make GLOBAL CONNECTIONS.**

| In your teaching of your TARGET CLASS, how often have you asked students to do the following | Almost never | A few times a semester | 1-3 times per month | 1-3 times per week | Almost daily |
|---|---|---|---|---|---|
| a. Study information about other countries or cultures? | O | O | O | O | O |
| b. Use information or ideas that come from people in other countries or cultures? | O | O | O | O | O |
| c. Discuss issues related to global interdependency (for example, global environment trends, global market economy)? | O | O | O | O | O |
| d. Understand the life experiences of people in cultures besides their own? | O | O | O | O | O |
| e. Study the geography of distant countries? | O | O | O | O | O |
| f. Reflect on how their own experiences and local issues are connected to global issues? | O | O | O | O | O |

**LOCAL CONNECTIONS refers to students being able to apply what they have learned to local contexts and community issues.**

**1. Here are some examples of practices that may help students learn to make LOCAL CONNECTIONS.**

| In your teaching of your TARGET CLASS, how often have you asked students to do the following | Almost never | A few times a semester | 1-3 times per month | 1-3 times per week | Almost daily |
|---|---|---|---|---|---|
| a. Investigate topics or issues that are relevant to their family or community? | O | O | O | O | O |
| b. Apply what they are learning to local situations, issues or problems? | O | O | O | O | O |
| c. Talk to one or more members of the community about a class project or activity? | O | O | O | O | O |
| d. Analyze how different stakeholder groups or community members view an issue? | O | O | O | O | O |
| e. Respond to a question or task in a way that weighs the concerns of different community members or groups? | O | O | O | O | O |

**USING TECHNOLOGY AS A TOOL FOR LEARNING refers to students being able to manage their learning and produce products using appropriate information and communication technologies**

**1. Here are some examples of practices that may help students learn to USE TECHNOLOGY as a TOOL FOR LEARNING.**

| In your teaching of your TARGET CLASS, how often have you asked students to do the following | Almost never | A few times a semester | 1-3 times per month | 1-3 times per week | Almost daily |
|---|---|---|---|---|---|
| a. Use technology or the Internet for self-instruction (e.g., Kahn Academy or other videos, tutorials, self-instructional websites, etc.)? | O | O | O | O | O |
| b. Select appropriate technology tools or resources for completing a task? | O | O | O | O | O |
| c. Evaluate the credibility and relevance of online resources? | O | O | O | O | O |
| d. Use technology to analyze information (e.g., databases, spreadsheets, graphic programs, etc.)? | O | O | O | O | O |
| e. Use technology to help them share information (e.g., multi-media presentations using sound or video, presentation software, blogs, podcasts, etc.)? | O | O | O | O | O |
| f. Use technology to support team work or collaboration (e.g., shared work spaces, email exchanges, giving and receiving feedback, etc.)? | O | O | O | O | O |
| g. Use technology to interact directly with experts or members of local/global communities? | O | O | O | O | O |
| h. Use technology to keep track of their work on extended tasks or assignments? | O | O | O | O | O |

## Appendix 3. Consent form for Interview Questions

Sayın Öğretmen;

Tarafınıza iletilen sorular, Trakya Üniversitesi İngiliz Dili ve Eğitimi yüksek lisans öğrencisi Yeliz Bolat tarafından, Dr.Selma Deneme danışmanlığında ortaokul ingilizce öğretmenlerinin 21.yy becerilerini öğretirken karşılaştıkları problemleri ortaya çıkarmak amacıyla hazırlanmıştır. Sizden beklenen, hiçbir baskı altında kalmadan belirtilen bütün sorulara açıklayıcı ve eksiksiz cevaplar sağlamanızdır. Bu araştırmaya katılım yaklaşık 20 dakika sürmektedir. Araştırmaya katılımınız tamamen gönüllülük temelinde olmalıdır. Katılımcılardan elde edilecek bilgiler, Ortaokul İngilizce Öğretmenlerinin 21.Yy Becerilerini Kullanımları Ve Karşılaştıkları Problemler adlı tezde kullanılmak üzere sadece araştırmacı tarafından değerlendirilecek olup bilgileriniz saklı kalacaktır. Sorular Google form aracılığıyla yazılı cevaplanacaktır fakat talebiniz doğrultusunda internet üzerinden yüz yüze veya telefonla da cevaplandırabilirsiniz. Eğer araştırmanın amacı ile ilgili verilen bu bilgiler haricinde şimdi veya sonra daha fazla bilgi almak isterseniz adresinden araştırmacıya ulaşabilirsiniz. Araştırma tamamlandığında sonuçların sizinle paylaşılmasını istiyorsanız lütfen araştırmacıya iletiniz. Araştırmaya katılmayı kabul ederseniz, aşağıdaki evet kutusunu işaretleyiniz.

İletişim:

Yukarıda yer alan araştırmadan önce katılımcıya verilmesi gereken bilgileri okudum ve katılmam istenen çalışmanın kapsamını ve amacını, gönüllü olarak üzerime düşen sorumlulukları anladım. Bu koşullarda söz konusu araştırmaya kendi isteğimle, hiçbir baskı ve telkin olmaksızın katılmayı kabul ediyorum.

Evet ☐

## Appendix 4. Yarı yapılandırılmış görüşme soruları (Orijinal)

**1.** 21.yy becerilerinin(eleştirel düşünme, iletişim, işbirliği, teknoloji kullanımı, yaratıcılık vb.) dil öğretimindeki yeri nedir? Aralarındaki ilişki nasıldır?

**2.** 21.yy becerilerini sınıfınıza nasıl dahil ediyorsunuz?

a. 21. yüzyıl becerilerini öğretirken hizmet içi eğitime ihtiyaç duyuyor musunuz? Duyuyorsanız hangi açılardan ( ders planlama, aktivite, 21.yy becerilerinin ne olduğu veya bu becerilerle ilgili güncel bilgilendirmeler)?

**3**.Öğretmiş olduğunuz müfredat 21.yy becerilerini hangi yönlerden destekliyor ve hangi yönlerden eksik kalıyor? Açıklar mısınız?

**4**. Mezun olduktan sonra üniversiteden aldığınız eğitimin 21.yy becerilerini kazandırma konusunda hangi açılardan etkisini gördünüz veya göremediniz? Açıklar mısınız?

**5.** 21.yy becerilerini dahil ettiğiniz derslerinizi düşündüğünüzde:

a.Öğretim esnasında sınıf ortamında herhangi bir değişiklik yapmak zorunda kaldınız mı? Sınıf ortamının yeterliliğinden bahseder misiniz?

b. İnternet, akıllı tahta gibi ihtiyaç duyduğunuz alt yapı veya materyallerle ilgili herhangi bir sorun yaşadınız mı? Yaşadıysanız bu sorunları belirtiniz.

**6.** Çalıştığınız kurumun 21.yy becerilerini kazandırma noktasındaki yaklaşımı (farkındalığı, çabası vb.) nasıldır? Hangi açılardan sizi desteklediğini veya desteklemediğini düşünüyorsunuz?

**7.** Öğrencilerinize hangi yönlerden 21.yy becerilerinin kullanımıyla ilgili örnek oluyorsunuz? Örnekle açıklar mısınız? Hiçbir yönden örnek olamadığınızı düşünüyorsanız nedenini belirtiniz.

**8.** Yukarıdaki sorularda gözden kaçırıldığını düşündüğünüz ve eklemek istediğiniz bir şey var mı?

**Appendix5. Semi-structured interview questions (English version)**

**1.**What is the place of 21st century skills(critical thinking, collaboration, communication, using technology, creativity etc.) in language teaching? How is the relationship between them?

**2**.How do you integrate 21st century skills into your lessons?

a.Do you need in-service training when integrating these skills? If so, in which aspects ( lesson planing, activities, up-to-date information about these skills)?

**3**. In what ways does the curriculum you teach support and lack in 21st century skills? Can you explain?

**4.**How did you see or did not see the effect of the education you received from the university after graduation on teaching 21st century skills? Can you explain?

**5.**When you think about your 21st century skills lessons:

a.Did you have to make any changes in the classroom environment during teaching? Can you talk about the adequacy of the classroom environment?

b.Have you had any problems with the infratructure or materials you need? Please indicate these problems, if any?

**6.**What is the approach (awareness, effort) of the institution you work for in teaching 21st century skills? In what ways do you think it supports or does not support you?

**7.**How do you set an example for your students in the use of 21st century skills?

**8.**Is there anything you think has been overlooked in the above questions and would like to add?

## Appendix 6. Scale use permission

## Appendix 7. Ethics Committee Permit Document

# Appendix 8. Approval from MoNE

T.C.
İSTANBUL VALİLİĞİ
İl Millî Eğitim Müdürlüğü

Sayı : E-59090411-20-26303016 10/06/2021
Konu : Anket ve Araştırma İzni (Yeliz BOLAT)

VALİLİK MAKAMINA

İlgi : a) Yenilik ve Eğitim Teknolojileri Genel Müdürlüğünün 21.01.2020 tarihli ve 2020/2 sayılı genelgesi.
b) Trakya Üniversitesinin 01.06.2021 tarihli ve 14992sayılı yazısı.
c) Müdürlüğümüz Araştırma ve Anket Komisyonunun 09.06.2021 tarihli tutanağı.

| | |
|---|---|
| Araştırma Konusu | : Ortaokul İngilizce Öğretmenlerinin 21. Yy. Becerilerini Kullanımları Ve Karşılaştıkları Problemler |
| Araştırma Türü | : Anket |
| Araştırma Yeri | : İstanbul |
| Araştırma Kişiler | : Ortaokullar |
| Araştırmanın Süresi | : 2020 - 2021 Eğitim ve Öğretim Yılı |

Yukarıda bilgileri verilen araştırmanın; 6698 sayılı Kişisel Verilerin Korunması Kanununa aykırı olarak kişisel veri istenmemesi, öğrenci velilerinden açık rıza onayı alınması, yüz yüze eğitime geçmiş olan kurumlarımızda, Covid-19 tedbirlerinin araştırmacı ve ilgili kurum idarelerince alınması, bilimsel amaç dışında kullanılmaması, bir örneği Müdürlüğümüzde muhafaza edilen mühürlü ve imzalı veri toplama araçlarının kurumlarımıza araştırmacı tarafından ulaştırılarak uygulanması, katılımcıların gönüllülük esasına göre seçilmesi, araştırma sonuç raporunun kamuoyuyla paylaşılmaması ve araştırma bittikten sonra 2 (iki) hafta içerisinde Müdürlüğümüze gönderilmesi, okul idarelerinin denetim, gözetim ve sorumluluğunda, eğitim ve öğretimi aksatmayacak şekilde, ilgi (a) genelge esasları dâhilinde uygulanması kaydıyla Müdürlüğümüzce uygun görülmektedir.

Makamınızca da uygun görüldüğü takdirde olurlarınıza arz ederim.

Levent YAZICI
İl Millî Eğitim Müdürü

OLUR
10/06/2021
Dr. Hasan Hüseyin CAN
Vali a.
Vali Yardımcısı

Ek:
1- İlgi (b) Yazı ve Ekleri (8 Sayfa)
2- İlgi (c) Tutanak (1 Sayfa)

Bu belge güvenli elektronik imza ile imzalanmıştır.

| | | | |
|---|---|---|---|
| Adres | : Bahçelievler Mah. İnönü Öğretmen Cad. No: 1 Sultanahmet Fatih İstanbul | Belge Doğrulama | : https://www.turkiye.gov.tr/meb-ebys |
| Telefon | : 0212 384 36 30 | Bilgi İçin | : Aydın BALTA |
| E-posta | : stratejigelistirme34@meb.gov.tr | Unvanı | : Veri Hazırlama ve Kontrol İşletmeni |
| Kep Adresi | : meb@hs01.kep.tr | İnternet Adresi | : http://istanbul.meb.gov.tr/ |

Bu evrak güvenli elektronik imza ile imzalanmıştır. https://evraksorgu.meb.gov.tr adresinden 1716-cb3f-3889-b9ae-2c1b kodu ile teyit edilebilir.

# Appendix 9. Post-Hoc Analysis based on years of experience of teachers

## LSD Test for Critical Thinking Skills

| (I) experience | (J) experience | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 0-5 years | 6-10 years | -,28873 | ,22224 | ,196 | -,7289 | ,1515 |
| | 11-15 years | ,43472 | ,24599 | ,080 | -,0525 | ,9220 |
| | 15+years | ,43770 | ,25674 | ,091 | -,0709 | ,9463 |
| 6-10 years | 0-5 years | ,28873 | ,22224 | ,196 | -,1515 | ,7289 |
| | 11-15 years | ,72345* | ,25400 | ,005 | ,2203 | 1,2266 |
| | 15+years | ,72642* | ,26442 | ,007 | ,2027 | 1,2502 |
| 11-15 years | 0-5 years | -,43472 | ,24599 | ,080 | -,9220 | ,0525 |
| | 6-10 years | -,72345* | ,25400 | ,005 | -1,2266 | -,2203 |
| | 15+years | ,00298 | ,28468 | ,992 | -,5609 | ,5669 |
| 15+years | 0-5 years | -,43770 | ,25674 | ,091 | -,9463 | ,0709 |
| | 6-10 years | -,72642* | ,26442 | ,007 | -1,2502 | -,2027 |
| | 11-15 years | -,00298 | ,28468 | ,992 | -,5669 | ,5609 |

*. The mean difference is significant at the 0.05 level.

## Dunnet T3 Test for Collaboration Skills

| (I) experience | (J) experience | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 0-5 years | 6-10 years | -,16936 | ,22700 | ,973 | -,7829 | ,4442 |
| | 11-15 years | ,48750 | ,20787 | ,124 | -,0768 | 1,0518 |
| | 15+years | ,47956 | ,22068 | ,185 | -,1222 | 1,0813 |
| 6-10 years | 0-5 years | ,16936 | ,22700 | ,973 | -,4442 | ,7829 |
| | 11-15 years | ,65686* | ,21296 | ,019 | ,0771 | 1,2366 |
| | 15+years | ,64893* | ,22547 | ,034 | ,0331 | 1,2648 |
| 11-15 years | 0-5 years | -,48750 | ,20787 | ,124 | -1,0518 | ,0768 |
| | 6-10 years | -,65686* | ,21296 | ,019 | -1,2366 | -,0771 |
| | 15+years | -,00794 | ,20621 | 1,000 | -,5762 | ,5603 |
| 15+years | 0-5 years | -,47956 | ,22068 | ,185 | -1,0813 | ,1222 |
| | 6-10 years | -,64893* | ,22547 | ,034 | -1,2648 | -,0331 |
| | 11-15 years | ,00794 | ,20621 | 1,000 | -,5603 | ,5762 |

## Dunnet T3 Test for Communication Skills

| (I) experience | (J) experience | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 0-5 years | 6-10 years | -,48029 | ,21209 | ,147 | -1,0539 | ,0933 |
| | 11-15 years | ,29667 | ,18015 | ,476 | -,1922 | ,7855 |
| | 15+years | ,19310 | ,25269 | ,968 | -,5059 | ,8921 |
| 6-10 years | 0-5 years | ,48029 | ,21209 | ,147 | -,0933 | 1,0539 |
| | 11-15 years | ,77696* | ,19389 | ,001 | ,2487 | 1,3052 |
| | 15+years | ,67339 | ,26266 | ,080 | -,0505 | 1,3973 |
| 11-15 years | 0-5 years | -,29667 | ,18015 | ,476 | -,7855 | ,1922 |
| | 6-10 years | -,77696* | ,19389 | ,001 | -1,3052 | -,2487 |
| | 15+years | -,10357 | ,23761 | ,998 | -,7689 | ,5617 |
| 15+years | 0-5 years | -,19310 | ,25269 | ,968 | -,8921 | ,5059 |
| | 6-10 years | -,67339 | ,26266 | ,080 | -1,3973 | ,0505 |
| | 11-15 years | ,10357 | ,23761 | ,998 | -,5617 | ,7689 |

*. The mean difference is significant at the 0.05 level.

## LSD Test For Using Technology As A Tool Learning

| (I) experience | (J) experience | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 0-5 years | 6-10 years | -,32224 | ,26067 | ,219 | -,8386 | ,1941 |
| | 11-15 years | ,20104 | ,28854 | ,487 | -,3705 | ,7726 |
| | 15+years | ,54628 | ,30115 | ,072 | -,0502 | 1,1428 |
| 6-10 years | 0-5 years | ,32224 | ,26067 | ,219 | -,1941 | ,8386 |
| | 11-15 years | ,52328 | ,29793 | ,082 | -,0669 | 1,1134 |
| | 15+years | ,86852* | ,31016 | ,006 | ,2542 | 1,4829 |
| 11-15 years | 0-5 years | -,20104 | ,28854 | ,487 | -,7726 | ,3705 |
| | 6-10 years | -,52328 | ,29793 | ,082 | -1,1134 | ,0669 |
| | 15+years | ,34524 | ,33392 | ,303 | -,3162 | 1,0067 |
| 15+years | 0-5 years | -,54628 | ,30115 | ,072 | -1,1428 | ,0502 |
| | 6-10 years | -,86852* | ,31016 | ,006 | -1,4829 | -,2542 |
| | 11-15 years | -,34524 | ,33392 | ,303 | -1,0067 | ,3162 |

*. The mean difference is significant at the 0.05 level.