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Research Article

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TEACHERS' AWARENESS AND ACTUAL PRACTICES OF 21st CENTURY LEARNING AND INNOVATION SKILLS.¹

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Abstract

This research study targets to examine Turkish teachers of English language awareness, motivation, organization (institution), and actual classroom practices in terms of 21st century learning and innovation skills which are named as communication, collaboration, critical thinking, and creativity skills. For this purpose, 26 Turkish teachers of English language at Firat University School of Foreign Languages were selected as the participants. With the aim of maintain the research study, mixed method descriptive case study was conducted. In order to gather data, a questionnaire (self-report instrument) and interviews were employed. Convenience sampling was administered in the phase of participant selection. Moreover, the collected quantitative data was analysed on SPSS program version 2.00 and qualitative data was analysed with reference to interview questions. At the result session, the analyses were explained and discussed in order to be a source, and present a different point of view for the further researches. The findings of the study proved that Turkish teachers of English Language in the context of the study were in short of theoretical and conceptual knowledge regarding 21st century learning and innovation skills, though they were excited to boost them up in the classrooms.

Keywords: 21st century learning and innovation skills, 4Cs, communication, creativity, critical thinking, collaboration

1. Introduction

“It is easier to build strong children than to fix broken men.”

Frederick Douglass

In the 21st century, people are living in a much more demanding world than in the previous centuries. Since the fast paced developments are occurring at a magnificent pace in technology, 21st century is ‘sui generis’ as a natural result of the novel strength of the humans to collaborate and compete globally (Jacobson-Lundeberg, 2016). There has been an efficaciously enormous exchange in terms of human power in every step of life. Human power has given its place to mainly digital skills, information, technology, and education. The underlying reasons of such a huge change in the 21st century are “fast paced information,

¹ This study is based on the first author's Master Thesis submitted to Institute of Social Sciences at Çağ University, Mersin, Turkey, in 2018.

technological changes, corporate downsizing, outsourcing, and the global work environment” (Jacobson-Lundeborg, 2016, p. 85).

This exchange has given way to huge shifts in the competences, skills, and even values in the area of education. As a fruit of these huge shifts, a framework was developed by Partnership 21 (hereafter P21), and the concerned framework includes Traditional Core subjects and skills domain, the Learning and Innovations skills domain, the Career and Life skills domain, together with Digital Literacies skills. Kivunja (2014a), and Trilling and Fadel (2009) state that if younger generations are requested to achieve success in the 21st century, they should be educated with reference to its needs, and they most probably meet the requirements of the 21st century demanding workplace’s needs by implying P21 framework in their every corner of lives. And the present research study is going to focus on the 21st century Learning and Innovation skills also called as 4Cs (communication, collaboration, critical thinking, creativity). P21 (2007b) defines that learning and innovation skills are considered as a gateway to be successful in the more demanding, social and complex life, that’s why learning and innovation skills put the importance on higher-order cognitive skills.

There is a plethora of information related to 21st century learning and innovation skills and teachers’ preparedness to integrate these skills into their instructional life and style (P21, 2007b; OECD, 2009; King, 2012; Williams-Hamilton & West, 2013; Clarke, 2014; McKenna, 2015; Nazikan & Park, 2016). However, Li (2016) emphasizes that the studies related to teachers’ background knowledge, awareness, institutional support, and motivation in terms of handling lessons interwoven with 21st century learning and innovation skills are quite rare.

According to the records of the Organization for Economic Co-operation and Development in 2009 (hereafter OECD), in most of the countries, have informed that they have revisited their curricula in the field of language education to measure up with the velocity of the 21st century educational requirements, and have renewed their curricula, programs or schedules parallel to the 21st century learning and innovation skills. For the purpose of yielding fruitful fresh generations both in the academic skills and basic daily skills, P21 (2002) concentrates on learning and innovation skills as one of the most crucial skills which are communication, creativity, critical thinking, and collaboration, For some scholars, the background reason of the low-level success in the field of English language education in Turkey is that it is in short of the competence of 21st century learning and innovation skills, and teachers’ not promoting aforementioned skills integrated with their actual practices in their classes (Doğanay & Ünal, 2006; Petek, 2018). They insisted that although English Language Teaching classes have been an important subject in the curriculum of the primary school, secondary school, and higher education (respectively), learners’ English level is still significantly low as they are not subject to the adequate English language education in line with the 21st century learning and innovation skills requirements. So, the present study aims to search about this situation at the context of Firat University. The objective of the present mixed method study is to investigate in which ways Turkish teachers of English at Firat University in Turkey include 21st century learning and innovation skills in language classrooms, and encourage learners to learn them; whether teachers have any familiarity with the 21st century learning and innovation skills, and are encouraged to promote them in their classroom practices, and how these practices are aligned with 21st century skills. These higher-order cognitive skills are quite significant and demanded in today’s world. Teachers’ perceptions, preparedness, and priorities regarding these higher-

order cognitive skills can proliferate the students' mastery degree and guide them to keep up with the developments. Following research questions were developed to guide the study:

1. To what extent are the Turkish teachers of English language familiar with 21st century learning and innovation skills?
2. To what extent are the Turkish teachers of English language motivated to promote 21st century learning and innovation skills?
3. What are the practices that these Turkish teachers of English implement to promote 21st century learning and innovation skills?
4. How are these practices aligned with 21st Century Skills?

2. Literature Review

2.1. Globalization and Language

It is a known fact that the world is no longer consisted of divided countries, 21st century world is a global village by the virtue of the advancements of the technology since those advancements minimized the distances, and increased the production. Technology has made easier and less demanding the human power demanding workloads for the past few decades. Jacobson-Lundeberg (2016) pointed the expeditious developments in the every corner of life as the reason of the uniqueness of the 21st century, as the very recently recognized power of humanity to collaborate and compete globally. Abundance of various explanations on globalization unites around collaboration, doing common business, and communication by falling down the explained boundaries thanks to communication, transportation, and information technologies, and the main medium of all these progression is English language (Al-khresheh & Almaaytah, 2018; Altan, 2017; Archambault, Wetzel, Foulger, & Williams, 2010; Fandino, 2013; Jerald, 2009; Sarıca & Cavus, 2009). There are plethora of definitions on the term of globalization, which are generally context-specific, and they mainly refer to the technological advancements around the world. According to Friedman (2005), globalization is the term that provides human with the strength of competing and communicating globally. The caption of globalization is placed from health to economy, from technology to social life. However, Miller (2016) underlines that there is no field of research more superior than education to benefit from the circle of globalization. In the same vein with Miller, García-Herreros (2017) stresses that 21st century globally advanced world has given birth to various and novel requisites from the students' perspective, and the most outstanding requisite is to exchange the message (communicate) in the second language fluently and accurately, which is also counted as a must for future citizens of the so-called global village. English language is welcomed as the language of both academic life and daily life (Sarica & Çavuş, 2009).

The only credible language for communication that is approved and accepted by the world nations is English. It is a visible fact that technological advancement has driven the mood of competition not only local level but also international level and from this dimension, globalization issue requires students be updated and armed with 21st century learning and innovation skills. That's why higher education organizations are expected to yield in fruitful and competent graduates. Miller (2016) states that inadequacies in the field of education, and advancements in the technology emphasize the pre-requisite of empowering the students along with 21st century skills. This pre-requisite was primarily recognized in the U.K., U.S, and the rest of the developed and developing countries. According to the reports of World Bank (2011), policy documentations all around the world intensifies on the higher-order cognitive skills named as: learning together, bringing up novel ideas, critical thinking, and points out that they are crucial for the future of the worlds' economy. In line with the report of World Bank (2011), OECD (2014) shows that exchanging information, analytical

thinking, state of patience, and power are all basically essential needs for both personal and collaborative well-being of the fast-paced globalized world. As informed in the research by Guao and Woulfin (2016) that U.K. government was pronounced as the first to consult the advices of National Advisory Committee on Creative and Cultural Education, directed by Ken Robinson since the end of the 20th century. And Fullan (2009) reports that Finland, which has the most outstanding education system running precisely in the world, put the importance on originality, and assiduously organizes teaching and learning structure for the upcoming generations inhabiting in its country. Likewise Finland, China has placed 21st century learning and innovation skills on to the first rows among its top-down national principles since the aim is to trigger the promotion of 4Cs among young generations to measure up with the requirements of the competitive world. (Guao &Woulfin, 2016).

Many challenges have been addressed in the 21st century in the various fields of life, and these challenges are being struggled mainly by educational organizations; they are working hard to overcome the requirements of the 21st century through implying 4Cs to students' educational life (García-Herreros, 2017). When the frame is narrowed down from educational organizations to teachers, challenges have brought the main responsibilities to teachers, and trainers since they are the triggering point of the schooling system (Kumaravedivelu, 2003; Li, 2016; P21, 2017). In the same line with Kumaravadelu, Rusdin (2018) perceives teachers, trainers and educational experts as gateway persons to decide on the outcomes of the application of 21st century learning and innovation skills. That's why teachers' preparedness and mindfulness have become more of a significant issue since the reflections are going to be placed on learners. All kinds of classroom activities effect students' awareness, competences, and mastering level of the 21st century learning and innovation skills. Technological advancements have obliged the teachers to renovate their skills, mindfulness to promote the addressed skills of the century and integrate these skills to their daily classroom activities. McDonald (2005) explains the cardinality of equipping the curricula with 4Cs by exemplifying detailed requests of the 21st century working life and he states that 21st century 4Cs are significant to be promoted in the classrooms in order to yield in promising citizens from the educational organizations. Furthermore; Jerald (2009) underlines the demanding working life and emphasize that the world is developing such a rapid pace that pupils need to be armed with managing skills since competitiveness has been the focal point in the agendas of the companies.

2.2. 21st Century Learning and Innovation Skills

It is claimed that '21st century learning and innovations skills' or '21st century competences' named as creativity, communication, critical thinking, and collaboration have been the center of attention and one of the most desired skills since they are the first requirements of the job qualifications (Soland, Hamilton, & Stecher, 2013). McKenna (2015) defines recognition of 21st century 4Cs as the skills of the century with the gaining of consciousness and mindfulness about the forthcoming advancements in the earlier days of 1990s by the policy makers, educational experts and leaders. The concept of '21st century skills' has become visible with the term of 'globalization'. According to some scholars and organizations, 21st century skills have come into existence as an inevitable consequence of the developments and innovations in the field of technology (P21, 2007a; OECD, 2009; Fandino, 2013; Happ, 2013; Clarke, 2014; Williams-Hamilton and West, 2013; Siddiq, Scherer, & Tondeur, 2016). King (2012) states that the concept of '21st century' has gained recognition and acceptance to a large extend, and was utilized as a map in the educational system. The skills gap between 21st century and previous centuries was recognized, and organizations such as P21 and OECD were set up with the aim of address this generation gap and minimize the mismatches between present and the past by formulating frameworks and

conducting research studies. And these organizations agreed on the major skills and knowledge that is looked for among the individuals and needs to be developed (King, 2012). 21st century learning and innovation skills are the most outstanding skills among the identified key skills. In the concerned research study subtitles which are also called as ‘4Cs, communication, creativity, critical thinking and collaboration- were examined.

2.3. Partnership 21

With the purpose of meeting the requirements, and forming a structure and defining the needful skills of the 21st century globalized world, the Partnership 21st Century Skills (P21) was set up by education experts, policy makers, advisors, leaders in 2002. P21 introduces itself as a non-governmental organization describing and realizing various needs of the educational fields from the earlier ages to the late life, from kindergarten to academic career life, targeting to grow up competitive, qualified, and knowledgeable individuals in a globally interconnected 21st century. The members of the P21 community are all around the world and they get together around the round table only one ambition which is to improve various bodies of the education, policy and measure up with the necessities of the concerned century. In accordance with this ambition, the members of the P21 defined a framework in 2007 (P21, 2007a), and the framework consists of core subjects (English, Reading, Language Arts, World Languages, Arts, Mathematics, Economics, Science, Geography, History, and Government and Civics) interdisciplinary themes (Global Awareness, Financial, Economic, Business, Entrepreneurial Literacy, Civil Literacy, Health Literacy, and Environmental Literacy) (see Figure 1). These subjects and themes put the emphasis on three basic skills: life and career skills, learning and innovation skills, and information, media, and technology skills. Zhao (2009) states that the framework defined by P21 is the most widely approved and appreciated as a map by educators and learners. Since the framework explains clearly the competence, mastery information, and ability that graduates need to be armed with in order to struggle against the globalized world demands from them.

It is significant to display that the basic fields included in the interest areas of the P21 are assessment, instruction, learning context, curriculum, and professional development trainings. P21 describes aforementioned items as the crucial ingredients of the education system not only in the 21st century but also for the further centuries, and if the aim is to reaching out promising generations, ingredients should be placed in the main educational system (P21, 2009a). In line with the abovementioned points, core subjects are (English, Reading, Language Arts, World Languages, Arts, Mathematics, Economics, Science, Geography, History, and Government and Civics) also important to be expend energy on in the education system integrated with interdisciplinary themes (P21, 2009a).

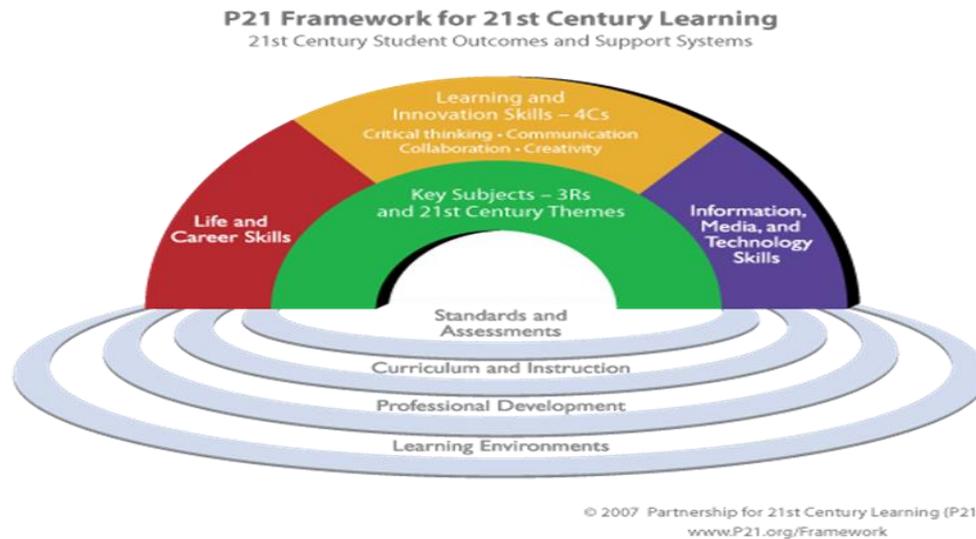


Figure 1. 21st century learning framework (Partnership for 21st Century Skills, 2011)

21st century Learning and innovation skills concentrates on the higher-order cognitive skills which are also the predominant target of the concerned research study, and they are named as collaboration, communication, critical thinking, and creativity. P21 (2007b) pinpoint these skills as the pre-requisite for the learners of the millennium in order to compete and survive in the working life. These skills all are interrelated which means that if you talk about collaboration in a group, so you already include communication subconsciously since the aim is to exchange messages, tolerate differences. And when you are practicing critical thinking activities in one of your English classes through storytelling activities or reflection activities, you already include creativity at the same time as these two skills go hand in hand in most activities. So it is not possible to fix strict borders among these four skills, and P21 (2017) also suggest to promote these 4Cs together to reach the objectives of the 21st century learning and innovation skills.

The skill of communication is a running domain and includes sub-domains called as interpersonal communication, writing, reading, and public speaking among others (P21, 2017). The aim in the communication is to transfer the message to the target audience, so the tool of communication does not matter. That is why it has many sub-domains (whatever helps to convey the message). Verbal or oral transference of the message is not the matter of issue, benefitting from gestures or mimicry is also the probable tools to convey your intentions. In a similar vein, P21 (2017) exemplifies that it is probable to trace the communication if the intended result is reached without looking at the tool of it. When it comes to collaboration, in the last decades it has been less painful to exchange the knowledge and experiences and produce a common product with the ones miles away from us thanks to technological advancements, especially in the field of education. On the educators level, it has become effortless to prepare a joint-research paper, take part in virtual conferences, search on the online libraries; and on the learners level, it has become easier to prepare a project, have your lessons from distance education, group presentations, and so on. Observing a process of producing something in a collaboration generally motivates individuals. Silva (2009) discusses that while the importance of collaboration in education has only been accepted in the last decades, it has been in the history of human for centuries. Silva gives countenance to the significance of communication and collaboration not dividedly but together with creativity and critical thinking. Silva asserts that 4Cs were important even before 21st century but the requirements of the century reshaped these skills, she underlines that before 21st century

knowledge related to 4Cs was important but after 21st century managing and active employment of these knowledge has gained importance.

Besides communication and collaboration, creativity is another important skill of 21st century learning and innovation skills. The term of ‘being creative’ has always been under discussion for centuries as it does not have any strict lines to describe it, but it has dressed up a new perspective in the 21st century together with the developments in technology and its direct causes and effects on education system (National Research Council, 2012; Trilling & Fadel, 2009). According to Craft (2008), the concept of creativity dates back to 1960s in U.S., and then circulates all around the world. Guao and Woulfin (2016) suppose that creativity has become popular as a natural consequence of employers’ demand and that’s the whole story of its renaissance in the 21st century. While some scholars assume creativity as an indispensable constituent of developing novel-strength and fresh opinions (Wagner 2008; National Research Council, 2013; OECD, 2013; P21, 2018), again the same scholars have not agreed on a decision on the explanation of creativity. Miller (2016) claims that there are possible logical explanations of creativity. While some scholars focus on the perspective of blending independent ideas (Higgins & Reeves, 2006), the others are for explanation of setting lines among structures, problems or ideas from different dimensions (Craft 2008; Happ, 2013). Since creativity has an irrefutable value, principally in the field of education and enterprise, it is primarily named as one of the gatekeeping abilities of 21st century learning and innovation skills by P21 (2017). According to Bapna, Sahrma, Ambika, and Kumar (2017), creativity is the ability of accomplishing or the process of accomplishing an aim, producing a product which is both sui generis and applicable. In all terms, the concept of creativity is desired in many fields, and dresses up new meanings in the each context which are close to each other. The last learning and innovation skill is critical thinking and its importance is uttered as predominant skill of the 21st century along with the previous three skills. (Soland, Hamilton & Stecher, 2013). Facione (1995) clarifies that critical thinking consists of reasoning types such as inductive and deductive reasoning, making analyses, inferences and evaluations. Soland, Hamilton and Stecher (2013) cite reasoning, making inference, and evaluation as one of the gate keeping abilities in order to grasp the main message of the context, interpret the content and also to reach better career life. Soland et al. advices to incorporate critical thinking skill into educational programs without any doubt as it is required from graduates, since employers ask for employees who are good at advancing the existing condition of the products frequently with the purpose of bearing the hardship of the competitive economy. Petek (2018) underlines that critical thinking and its related sub topics have been searched in different fields of education in the last decades, but the number of the studies administered in the field of language education is remarkably few. That is why Petek advices to focus on learners’ mindfulness of critical thinking in the field of foreign language education since there is a common misinterpretation about how to be a critical learner-teacher. P21 (2011) identifies critical individuals as persons who examine, interpret and criticize the matters from different angles before reaching a final decision or judgement.

3. Methodology

3.1. Research design

Present mixed method descriptive case study was administered at the mid-size School of Foreign Languages, to investigate how Turkish teachers of English at Firat University in Turkey promote 21st century learning and innovation skills-4Cs in the classrooms, whether teachers were accustomed to 21st century learning and innovation skills such as critical thinking, collaboration, creativity, communication, and how the employed classroom practices were aligned with the 21st century skills. The researcher was already employed at

the context of the study and no specific criteria was cared while utilizing Convenience Sampling in the study. All of the teachers working at the context of the study took part in the questionnaire voluntarily; 26 teachers took part in the questionnaire, and interviews were held with five teachers.

For the quantitative part of the research study, a likert type questionnaire was conducted in the traditional paper-pen format. The aim to conduct the likert-type questionnaire was to understand teachers' familiarity, and the variety in their classroom practices in terms of 21st century learning and innovation skills-4Cs from the perspective of Knowledge, Motivation and Organization-institutional support (KMO).

To back up the quantitative data, and have more detailed comments on the 21st century learning and innovation skills-4Cs, interviews were held. At the first step, the researcher and the participants agreed on the most suitable time to hold the interviews, and after fixing the common free time for both parties, interviews were held. While holding the interviews, the researcher was attentive about time allocation for each question, clarifying any questions or concerns, and tried to diminish the threat of leading the interviews with any probable prejudice. Interviews were held in teachers' mother tongue. While translating the transcriptions of the interviews, apart from cross checks by language experts at the faculty online translation programs were benefitted. Also proof reading was done by a native speaker to decrease the loss of meaning,

3.1.2. Participants and Sampling

The concerned research study was conducted with 26 English language teachers at the preparation department at the School of Foreign Languages. 10 male and 16 female teachers took part in the quantitative part of the study, and 2 male and 3 female teachers (the suitable ones in terms of spare time) took part in the interviews. Participant teachers were graduates of English language and literature department, English language and teaching department, and department of English translation and interpreting (see Table 1 for the demographic information).

Table 1. *Demographic information of the participants*

Academic Career	Gender	
	Female	Male
Graduate of Bachelor Degree	3	4
Studying MA	7	2
Graduate of MA	1	
Studying PHD	4	4
Graduate of PHD	1	
Total number	16	10

3.1.3. Data collection tools

The questionnaire was a thirty-two-item questionnaire with six-factor model in the first part and five-factor model in the second part developed by McKenna in 2015 to examine about teachers' Knowledge, Motivation, and Organization-institution (KMO). McKenna informed that the questionnaire was prepared by depending on the P21 framework with the respect of 21st century learning and innovation skills-4Cs. There were 3 sets of questions, the first set of questions were examining about Knowledge (item 1, 2, 3, and 4), Motivation (item 5, 6, 11, and 12), and Organization (institutional support) (item 7, 8, 9, and 10). First part of the questionnaire were 6-point Likert scale type questions ranging from 'Strongly Disagree' to 'Strongly Agree', in the second part there were 20 questions which were 5-point Likert scale

type ranging from ‘Never’ to ‘Always’. Apart from 31 questions, there was also a third part in the questionnaire with 20 items which were aiming to explain the reasons of the related items in the previous part. In the second part of the questionnaire, participants were asked about their classroom practices in terms of 21st century learning and innovation skills-4Cs. If the participants select ‘Never’ or “Seldom” as a respond in the second part, they are presented a list of reasons (why never? Or why seldom?). The options are parallel to KMO frame starting with ‘I have never heard of this’ and ends with ‘Other’ in the third part. If the participants responded to the questions by choosing the ‘Other’ option, they were asked to give detailed long answer in the open-ended question part.

Interviews were held with 5 teachers at the School of Foreign Languages. Both Turkish and English versions of the interview questions were available, but Turkish version of the interview questions were employed in order to reduce the risk of losing data and risk of misunderstanding the questions. Totally 7 interview questions were asked by depending on the related literature. Questions were examining about teachers’ mindfulness, actual classroom practices, encouragement motivation, and sense of responsibility in terms of promoting 21st century learning and innovation skills. The questions were prepared from the perspective of KMO

3.1.4. Data analysis

While analyzing the quantitative data, mean score 4 and higher (Mean score ≥ 4.0) was accepted as positive high score for the first part of the questionnaire, and for the second group of questions mean score 3, and higher (Mean score ≥ 3.0) was accepted as positive high score since the developer of the questionnaire (McKenna, 2015) advises these scores as proper values to be accepted as positive indicator. Interviews and open ended results of the last question in the questionnaire were analyzed with reference to the interview questions. Interviews’ records were transcribed and themes were emerged in the same line with KMO frame and interview questions such as knowledge, motivation, organization, specific classroom activities, and curriculum.

4. Findings

4.1. Quantitative results of the study

The purpose of employing the questionnaire was to collect data about teachers’ knowledge, motivation, organization, and various classroom practices in terms of 21st century learning and innovation skills. Participants were examined about their general information about the topic of 21st Century Skills in the first part of the 21st Century Learning and Innovation skills-4Cs (communication, critical thinking, collaboration, creativity) Questionnaire prepared by McKenna in 2015. Table 4 shows the results of the first part of the questionnaire, and provides information about teachers’ Knowledge, Motivation, and Organization (institutional support) in terms of 21st century learning and innovation skills. The questionnaire used 6-point Likert scale questions by employing the following values respectively: (1) strongly disagree; (2) disagree; (3) somewhat disagree; (4) somewhat agree; (5) agree; (6) strongly agree. As advised by McKenna (2015), mean score of 4 and higher (mean score ≥ 4) was accepted as a powerful indicator of KMO, and mean score equal to 3 (mean score = 3) was accepted as a neutral indicator, and mean score lower than 3 (mean score < 3) was accepted as a weak indicator of the related items in terms of 21st Century 4Cs.

Table 4. Descriptive results of the first part of the questionnaire

	Question	Mean	SD
Knowledge	I have heard of 21st Century Skills	4.53	1.36
	I understand the concept of 21st Century Skills	4.65	1.05
	I know how to develop them in my students	4.26	1.34
	I am aware of my students' development of 21st Century Skills	4.11	1.14
Overall Mean		4.38	
Motivation	I can positively affect student achievement by developing 21st Century Skills.	4.53	1.02
	I am capable of delivering lessons that develop these skills in my students.	4.23	1.06
	I am interested developing these skills in my students.	5.57	0.64
	My students need these skills.	5.23	1.06
Overall Mean		4.89	
Organization	I have received training on 21st Century Skills.	3.11	1.68
	I have the time and materials necessary to develop these skills.	3.00	1.23
	The curriculum supports developing 21st Century Skills.	2.80	1.32
	My organization places emphasis on these skills.	3.50	1.14
Overall Mean		3.10	

Note. (n=26)

As presented in Table 4, most of the items regarding teachers' Knowledge and Motivation in terms of broad topic of 21st century skills yielded a mean score between 4 (somewhat agree) and 5 (agree) generating a phlegmatic-to-positive correspondence among items. Organization title yielded a mean value between 2 (disagree) and 3 (somewhat disagree). The items coded for Organization generated lower and neutral mean scores which were accepted as negative scores.

After responding to general questions in the first part, participants responded to the classroom practices and they were required to respond to 5-point Likert scale questions. The rating design was from 1 to 5 respectively: (1) Never; (2) Seldom; (3) Sometimes; (4) Frequently; and (5) Always. The participants chose 'Seldom' or 'Never' options in this part were asked to respond to the questions in the coming part about their reasons of not promoting 21st century 4Cs. Among the options, there was also 'Other' which provided the participants with a choice to give a free open-ended response at the very end of the questionnaire. In the second part, mean score of 3 and higher (mean score ≥ 3) was accepted as a strong indicator of the related skills practiced in the classrooms.

Table 2. *Teachers' current classroom practices*

Skill	Mean	SD
Generating Conclusion	4.07	0.84
Presenting and supporting claims	4.00	0.84
Identifying basic relationships	3.96	0.72
Identifying common logical errors	3.73	1.00
Understanding interpretations	3.69	0.78
Focus	3.65	0.89
Navigating digital sources	3.57	0.98
Cultivating useful ways of thinking	3.42	1.23
Problem-solving protocols	3.38	0.85
Responsible interaction	3.30	1.37
Perspective taking	3.19	1.26
Divergent thinking	3.11	1.11
Generating mental images	3.07	0.84
Controversy and conflict resolution	3.03	1.37
Convergent thinking	2.84	1.08
Performing mental rehearsal	2.61	0.98
Conducting thought experiments	2.53	1.17
Avoiding negative ways of thinking	2.37	1.14
Drawing and sketching	2.23	1.10
Generating graphic representations	2.03	0.72
Total	3.23	0.60

Note. (n=26)

Table 5 informs about teachers' 21st Century 4Cs related classroom practices in detail. The results in the table shows that participants had a mixed level of interest in terms of promoting 21st century learning and innovation skills in their classrooms. There are 20 items related to teachers' 21st Century 4Cs practices, and 18 of the 20 items indicated mean score lower than 4 which conveys that teachers are employing the related 4Cs practices in the classrooms less than '*Frequently*'. According to the mean scores illustrated in the Table 5, it is not reasonable to define fixed borders among teachers' 21st Century 4Cs practices. 21st Century 4Cs practices are all interrelated, and also teachers' addressing way of the related skill also effects its being either collaborative or communicative, or even both. If the activities or exercises are administered in groups, then it is possible to mention about both communication and collaboration along with creativity and critical thinking skills.

As abovementioned, the participants who chose 'Seldom' or 'Never' options about the frequency of conducting the related 21st century 4Cs practice in the classrooms were required to clarify about the reasons of their inadequate practices. They were provided a list of probable reasons for their inadequate 4Cs practices in the classroom. All probable reasons provided to the participants are presented in Table 6.

Table 6. *KMO Challenges Regarding 21st Century Learning and Innovation Skills*

21 st Century Learning and Innovation Skills	Number of Respondents						
	Knowledge Causes			Motivation Causes	Organization Causes		
	I've never heard of this.	I don't know what it means.	I don't know how	It is not a school priority.	I don't have what I need. (time/materials)	Other.	
Navigating digital sources	0	0	0	0	2	0	
Identifying common logical errors	0	0	1	0	1	0	
Generating conclusions	0	0	0	0	1	0	
Presenting and supporting claims	0	0	0	0	2	0	
Focus	0	1	1	0	0	0	
Divergent thinking	2	3	2	1	0	0	
Convergent thinking	2	4	2	0	0	0	
Problem-solving protocols	2	1	0	0	1	0	
Identifying basic relationships	0	0	0	0	1	0	
Creating graphic representations	0	1	5	2	3	0	
Drawing and sketching	1	0	2	1	4	0	
Generating mental images	0	0	0	0	2	0	
Conducting thought experiments	1	1	6	1	2	0	
Performing mental rehearsal	1	0	5	1	2	0	
Understanding interpretations	0	1	1	0	2	0	
Cultivating useful ways of thinking	0	1	1	1	1	0	
Avoiding negative ways of thinking	0	1	0	0	1	0	
Perspective taking	1	2	1	0	1	0	
Responsible interaction	1	3	1	0	2	0	
Controversy and conflict resolution	1	0	1	0	2	0	
Total Responses	12	19	29	7	30	0	

As shown in Table 6, the list included Knowledge related reasons, Organization related reasons and Motivation related reasons, and participants chose totally 97 times all of the KMO related challenges parallel to their reasons. Nearly 65% of the time (60 of 97 responses) Knowledge related reasons were chosen, around 31% of the time (30 of 97 responses) Organization related reasons were chosen, and the rest 4% of the time (7 of the 97 responses) Motivation related reasons were chosen as the source of the failure in promoting 21st century learning and innovation skills in the classroom activities. Most of the

participants chose “I’ve never heard of this”, “I don’t know what it means”, and “I don’t know how” items which pinpointed that Knowledge was the major reason of their not promoting 21st century learning and innovation skills in their classrooms decently. Organization related reasons were chosen at the second place as the source of the failure in promoting 21st century 4Cs in the classrooms. At third place motivation related reasons were chosen. Participants performed higher motivation for promoting 21st century 4Cs in the both part of the 21st Century Learning and Innovation Skills Questionnaire. None of the participants chose ‘Other’ option as a reason to give free open-ended response at the end.

4.2. Qualitative results

4.2.1. Teachers’ knowledge about 21st century learning and innovation skills

In general, participant teachers did not show detailed conceptual and theoretical knowledge about 21st century learning and innovation skills. However, the reflection of the interviews was that the teachers’ background knowledge, which is dating back to bachelor degree or master degree programs, was triggered by the interview questions. It was seen that albeit superficial, teachers had limited knowledge about the theoretical background of the 21st century skills and its branches in the classroom in the shape of practices. Teachers’ reactions to the question related to their knowledge about the 21st century skills and language education was discouraging since all of the interviewees underlined that they deprive of the theoretical basis of it.

“I do not have a terminological knowledge about 21st century learning and innovation skills, but as can be understood from its name, I assume that these skills require some cognitive and instructional skills. Although I do not know about its background theory, I think that they are student-centered skills as they were born in the millennium. They can be as communication skill, problem solving skill and collaboration.” (Respondent 1)

4.2.2. Teachers’ current classroom practices in terms of 21st century learning and innovation skills

When interviewees were asked about the most outstanding 4Cs skill to be practiced more in the classroom, majority of them informed that they put the emphasis on communication and collaboration related practices in the classrooms. Respondent 3 cited that she benefits from different technics regarding communication and collaboration while teaching. She pinpointed that her objective was to make students feel outside the box. For her, the students need to be ensured that they are at university not high school in terms of the design of the classes. R3 underlined that she adopts communication collaboration, creativity and critical thinking related practices as tools to increase students’ social and real life language skills, and in this way students perceive themselves as a part of the target language and culture.

“I utilize role-play activities, pair work, group work, project presentations, interviewing with peers, recording a video, and storytelling activities in my various classes. Students are administrating all these activities in a collaboration, and I observe that their social daily language skills also improve together with their academic language in the process as well as they integrate with the target culture.” (Respondent 3)

4.2.3. Teachers’ feeling of responsibility regarding promoting 21st century learning and innovation skills

When teacher asked about whether promoting 21st century skills in the classroom is teachers’ responsibilities or not, all of them reported that the ultimate aim is to generate competent graduates and prepare the students for life, promoting 21st century skills is not only the responsibility of books or syllabus, but also teachers even if it is not stated openly

among the responsibilities of the teachers. And they underlined that students need updated education parallel to the needs of the 21st century skills, and this is only possibly with teachers shouldering the responsibilities.

“It is not only the responsibility of the course books to promote 21st century learning and innovation skills. When we observe that course books are not meeting the requirement of the 4Cs, we should intervene and promote it according to immediate task. Our duty is not just teach the book and leave all the rest skills to be learned out of the school. We should place these 4C skills as a way to teach the language.” (Respondent 4)

“... teachers should show the ways of thinking, and teach learning strategies as a guide in the class because teachers should direct students’ skills in the right way. When I assign the tasks to students to be conducted in groups, group members are not doing the works equally. That’s why students should not be let alone after assigning the tasks, teachers should direct the activities to make them gain the communicative and collaborative skills together with other analytical skills.” (Respondent 5)

4.2.4. Teachers’ motivation regarding promoting 21st century learning and innovation skills in the classes

Literally, teachers illustrated their high level of motivation by asserting that they are teaching English for life, and since the 4Cs are daily life skills, these skills should be promoted equally in the classrooms. However, they had a complaint about the syllabuses since they were restricted with syllabuses to cover the cited units or pages on the agreed time. That’s why interviewees reported that while course materials and students’ eagerness to learn was motivating for them, syllabus was demotivating and discouraging factor them to promote 4Cs decently in the classrooms.

“While there are many tasks related to 21st century learning and innovation skills in our course books, teachers are not free to practice them according to students’ needs as the syllabus is the limitation. Timing and syllabus issues are demotivating me in terms of promoting these 4Cs in my classes as the aim is to just teach the rules and cover the unit, we do the exercises very few times.” (Respondent 1)

“All of the materials are adequate for teaching a decent lesson in accordance with the requirements of a real language teaching. However, we are in short of time cause of worrying about keeping up with the syllabus.” (Respondent 3)

4.2.5. Organization (institution) dimension of 21st century learning and innovation skills

On the one hand, most of the interviewees conveyed their satisfaction with the School administration since they do not intervene to the teachers’ lecturing designs directly. On the other hand, interviewees restated their discontentedness with the syllabus-based lecturing design in terms of inhibiting the promotion of 21st century 4Cs. Interviewees complained that syllabuses are planned exam-oriented by the management, and this affects their classroom practices.

“School management is not intervening our lecturing styles directly, they support us. However, it is an undeniable fact that teachers need to cover the units in the defined time because all of the students are going to have the same exam without specifying their proficiency levels. That is why all of the teachers are trying to keep up with the same pace outlined in the syllabuses without allocating adequate time for each 21st century learning and innovation skill.” (Respondent 1)

“I’m contend with the management as they do not interfere with the teachers’ teaching styles or classroom practices. However, I strongly believe that time allocation is the main issue in

need of being handled by the management with the aim of placing all of the 4C skills integrated.” (Respondent 3)

5. Discussion and Conclusion

5.1. Discussion with reference to research questions

- *“To what extent are the Turkish teachers of English language familiar with 21st century learning and innovation skills?”*

The first research question investigates teachers’ background knowledge about 21st century learning and innovation skills. In a nutshell, although teachers were in short of theoretical knowledge regarding 21st century learning and innovation skills, it is strongly believed that teaching linguistic rules are not the whole story of language education; apart from teaching academic skills, teachers should also teach basic communicative daily skills which is possible with 21st century skills centered education. However, a discrepancy was observed between qualitative and quantitative results of the research study in terms of teachers’ basic knowledge. While ‘Knowledge’ related part of the questionnaire yielded in high mean score (4,38), participants underlined in the interviews that they deprive of essential terminological and conceptual knowledge about 4Cs. The similar discrepancy case was faced up with in the study of McKenna (2015) where he deduced that teachers are not aware of what they know and what they do not know. This mismatch shows that the teachers have superficial knowledge about 21st century 4Cs in the concerned context.

In the same line with Li (2016), obviously in the context of the present research study, participants illustrated definite, albeit beneficial knowledge about 21st century learning and innovation skills in terms of affirming the significance of promoting 4Cs in classes to advance students’ higher-order cognitive skills. In link with this situation, one of the most dominant findings of the research study was that students must get the education parallel to 21st century learning and innovation skills from kindergarten, and this dimension ties well with preceding studies by Nuremberg Recommendations on early foreign language learning (2010), Jacobson-Lundeberg (2016), Zivkoviç (2016), and KIITOS21 (2018). They also impress on in their individual studies regarding learners’ and teachers’ readiness in terms of acquiring and promoting 21st century 4Cs that learners should be exposed to the lessons integrated with 21st century 4Cs from the early grades. As also demonstrated among the results of the concerned research study, it is urged on in the literature as well that nurturing proficient graduates from higher education institution bodies is feasible with perceiving promotion of 4Cs as the basic step of the education from the very early years (Jacobson-Lundeberg, 2016; Nuremberg Recommendations on early foreign language learning, 2010; Zivkoviç, 2016, İnözü and Can, 2018).

From the perspective of Fandino (2013) and Brown (1999), language education should not be perceived as the box of linguistic rules, language is like a living organism and so its education is, and redesign itself in a harmony with the conditions. This perspective was also enriched by the participants in the qualitative part of the concerned study. KIITOS21 (2018) declared that communication is the vital point of the language education, and in the same vein, participants of the present study asserted that language should be taught in order to contact with people, not to memorize plethora of rules, and the ultimate aim should be communication in language education (Eaton, 2010; Fandino, 2013).

- *“To what extent are the Turkish teachers of English language motivated to promote 21st century learning and innovation skills?”*

The second research question asked about teachers’ motivation level and its tie with the organization. Teachers defined curricular problems as institutional challenges, discouraging

issues, and impediments tackling to promote 21st century learning and innovation skills. Teachers informed that syllabus was hampering them to promote each of the 4Cs equally, and this was enervation for them. When it comes to name the reasons of the impediments in the curriculum in terms of activating 21st century learning and innovation skills freely, albeit not examined on purpose, teachers cited that the institution is limiting teachers to cover only the agreed units in the syllabus. That's why curriculum restricts the time allocation to practice 21st century 4Cs without worrying about the punctuality. However, findings demonstrated that in spite of the impediments in the organization, teachers were standing up to master students' 21st century learning and innovation skills by means of classroom activities. Beside this situation, both qualitative and quantitative results proved that teachers were profoundly motivated to activate 4Cs in their classes. The quantitative results of the study showed that Motivation yielded in the highest mean score (4.89) in the questionnaire among KMO heads. Also it was underlined in the interviews that students' aspiration to learn and master their English Language level was the motivation source for teachers to handle all the challenges to allocate some place for promoting 4Cs. It is possible to conclude that teachers are highly motivated to promote 21st century learning and innovation skills. Teachers are ready to practice 4Cs decently in their classes on condition that they are provided with the organizational assistance in the sense of tailoring the syllabuses respectively, and providing teachers with the professional development training in terms of meeting the teachers' knowledge gap need regarding 21st century 4Cs.

Organizational (institutional) dimension of the study is very similar to Archambault's (2010) study in the sense of promoting 4Cs; most of the participants agreed that 4Cs were not being promoted decently since the curriculum was not placing importance on those skills. The claimed reason was to measure up with the syllabus, which restrict teachers to move freely. In this sense, while it is advised by Kumaravadivelu (2004) in the literature that teachers may have the liberty of generating their theory of practice, in the context of the concerned study teachers are confined to teach the book approach. As the same problem aroused in the different research studies, literature documented that curriculum or programs must be integrated with 4Cs (OECD, 2009; Roterham & Willingham, 2009; Wagner, 2008; Soland et al., 2013). Given the fact that the advised conditions are ensured, teachers pointed up that they are passionate to practice 21st century 4Cs in the classrooms.

- *“What are the practices that these Turkish teachers of English implement to promote 21st century learning and innovation skills?”*

Storytelling activities, discussion sessions, group work, pair work, and brainstorming were reported as the most widely administered activities to activate 21st century learning and innovation skills. Compared to 'Knowledge' head, no mismatch was observed between the questionnaire results and interview results in terms of teachers' actual classroom practices regarding 4Cs. In a similar vein with the notification of the OECD released in 2009, the present research study also come up with that while the significance of 21st century learning and innovation skills is noticed by educational parties, teachers are not liberal to promote them respectively. As also illustrated in the PISA reports, there are some tackling points with growing up competent graduates in terms of 4Cs in Turkey. The findings of this research study support this report since the abovementioned problems were encountered among teachers. Similar to the Chinese situation searched by Li (2016), and Sang, Liang, Chai, Dong, and Tsai (2018), it is potential to mention about a discrepancy in Turkey between the language education policy of MoNE (2013), and teachers' actual classroom activities caused from some practical reasons (Doğanay & Ünal, 2016; Petek, 2018). Although MoNE supports and provides formal documentation to master 4Cs at schools, school administrators and teachers prefer to follow exam-oriented approach in the actual classroom practices, and

that's is why Turkey fall behind the priorities of the century. This mismatch between the national educational policy and schools' actual classroom practices clarifies the reason of the weak level of achievement. Voogt, Knezek, Knezek, Cox, and Brummelhuis, (2013) and Sang et al. (2018) discussed that insufficient consolidation of 21st century 4Cs to curriculum and programs along with teachers' weak, most probably effortlessly prepared activities results in poor promotion of 21st century 4Cs.

The present research study back up the literature in sense of teachers' active role as well. Majority of the participants cited that they feel as a scaffolder or facilitator when collaborative and communicative tasks such as group work and pair work employed appropriately, and this is consistent with literature in that 21st century skills shapes teachers as facilitator, and those skills are student-centred skills (Dede, 2010; Fandino, 2013; Lam, 2015). The present research study contributed to the literature, and at that point Lam (2015) alerted teacher about students' misusing collaborative tasks with a specific term named 'social loafing', and advised teachers existence always as scaffolder. A similar warning came from in the interviews in the form of a complain, teachers alerted about social loafing and suggested teachers' role here to be as either facilitator or scaffolder to reduce the level of the problem.

- *"How are these practices aligned with 21st century skills?"*

The aforementioned practices applied by teachers in the classrooms, which were presenting a project, storytelling, group work, pair work, video recording, and brainstorming are all in line with the 21st century learning and innovation skills as documented in the literature (Archambault, 2010; Wagner, 2008; Kuhn, 2015; Heinrich, 2016; P21, 2017; Petek, 2018; Roy, 2016; Rusdin, 2018). In the studies conducted by Li (2016), and Eisner (2002), presenting a project, storytelling, group work, pair work, video recording, and brainstorming were not occupying a serious place, so they were not perceived as aligned with 21st century 4Cs. In contrast to Li and Eisner, in the present research study, teachers' actual classroom practices, albeit inadequate, were all aligned with the 21st century learning and innovation skills as imagination, playfulness, mindfulness, group works, storytelling activities, and so on were taking up severe academic room among the classroom practices.

In spite of the claim in the literature that foreign language classes may hamper the learners' mastery degree of 4Cs since generally grammar oriented schedule is adopted in those classes (Manalo & Sheppard, 2016), and in contrast to Li's study (2011), it was found in the present study that language classes are the proper place to advance learners' 21st century 4Cs. The present research profoundly acknowledge that foreign language classes are the exact facilitators to advance 4Cs as they have the potential of providing factual real life platforms to reflect all the perspectives in a harmony within the language more than dull linguistic forms (Petek, 2018). Learners have the possibility to enlarge their language skills by means of active adoption of communication and collaboration practices along with critical thinking and creativity in language classes which was also cited by the participants at the context of the research since they assert that practices were congruent with the 4Cs.

5.2. Conclusion

This research study was set out in order to investigate about teachers' knowledge, motivation, organization (institutional support), and their actual classroom practices together with application of the practices related to 21st century learning and innovation skills in EFL classrooms in Turkey, Firat University context. The objective was to fill the addressed research gap identified in the literature. Higher-order cognitive skills, which are named as 4Cs have crucial place in education for both teachers and learners, and these skills should be

placed in the curriculum urgently. However, placing those skills in the curricula is not sufficient, their application is the matter of issue. That is why their application should be cared by the responsible authorities till 4Cs application in the actual classrooms become a habit more than an obligation.

Reflections on the findings of the research study suggest that a harmony needed to be settled among KMO regarding enriching EFL classes with noble, sensible, attractive, and authentic practices in terms of 21st century learning and innovation skills. It is wise to mind that teachers' classroom practices are the reflections of their perceptions; and in the present research study, teachers were trying hard to give room to 4Cs in their limited, albeit fragmented, classroom academic hour which illustrated that they were quite contributory and motivated to promote 4Cs. When the 4Cs are accommodated into the curriculum decently, the next step should be providing teachers with professional training sessions to practice them wisely in their classroom since they need more than superficial knowledge about mainly 21st century skills and 4Cs.

As for the beginning time to promote 4Cs at the educational organizations, early years are advised (Volume, 2018; KIITOS21, 2018). At this point, it is meaningful to recall the words from Frederick Douglass "it is easier to build strong children than to fix broken men" (as cited in McKenna, p.81). The message here is to be in the conscious of the significance of teaching something from the beginning steps, instead of repairing the broken parts later on repeatedly. Teaching 4Cs integrated English lessons in the earlier grades brings the opportunity of being a competent individual or graduate in terms of 21st century skills to students. However, when students' run into 21st century 4Cs at the university level, it becomes a challenge for teachers to repair the students' mislearnt practices regarding 21st century 4Cs.

For a final word, if teachers are in short of conceptual or actual knowledge, then reforms or renovations regarding 4Cs adjustment to curricula stays at the theory level. However, it should be recalled that students need these skills in practice even starting from the very early years of their education life.

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