Investigation of 21st Century Learner Skills Usage Levels of Turkish Language Teacher Candidates

Saadet Maltepe[1], Emre Bayrakdar[2]*

[1]Balikesir University, Balikesir, Turkey

[2]Istanbul University-Cerrahpaşa, Istanbul, Turkey

Corresponding author: Emre Bayrakdar, E-mail: emre.bayrakdar@iuc.edu.tr

ARTICLE INFO

ABSTRACT

In this study, it was aimed to determine the 21st century learner skills usage levels (cognitive skills, autonomous skills, collaboration and flexibility skills, and innovation skills) of Turkish language teacher candidates in terms of some variables (gender, grade level, success status). In this study, singular screening, causal comparison and relational screening models were used together within the framework of quantitative research approaches. The respondents were 259 students studying in Turkish Language Teaching Program of Turkish and Social Sciences Department at Balikesir University Necatibey College of Education in the 2018-2019 academic year. The "21st Century Learner Skills Usage Scale" developed by Orhan Göksün (2016) was used as the data collection tool. The scoring of the five-point Likert-type scale consisting of 31 items was made from never (1) to always (5). The 31 items in the scale were gathered under four factors as cognitive skills, autonomous skills, collaboration and flexibility skills, and innovation skills. In the analysis of the data obtained, mean for descriptive analysis, t-test and analysis of variance techniques for comparisons made by the related variables were used. In the study, it was found that the 21st century learner skills usage levels of Turkish language teacher candidates differed in favor of males only in the innovation skills dimension of the scale. It was concluded that as the grade level and grade point average increased, the level of 21st century learner skills use of the participants also increased.

Key words: Turkish Language Teacher Candidates, 21St Century Learner Skills, Cognitive Skills, Autonomous Skills, Collaboration And Flexibility Skills, Innovation Skills

INTRODUCTION

Today, change and development are very fast. Especially developments in science and technology, globalizing world, political movements, wars, natural disasters, epidemics and so on are the important factors affecting the existence of changes in the world order. These changes sometimes reveal positive and sometimes negative results. What is expected of today's people is to adapt to positive changes and to give the most rational response in the current conditions against negative and unexpected changes.

Individuals should have basic skills as well as high-level skills and competencies to adapt or react to changes; to keep up with technology, to obtain the relative information among the masses of rapidly produced information by selecting, analyzing, and evaluating; to use the information they obtain in their daily lives; and to transform them into products. These skills and competencies that individuals should have in the information society are called 21st century skills. (Anagün et al., 2016, p. 161)

Obviously, 21st century skills are an area of research that focuses on many disciplines. Since these skills define the characteristics that people should have today, their importance is highlighted in many studies conducted at the individual and institutional level. When these studies in the literature are examined, it is seen that 21st century skills are classified in different ways. Voogt and Roblin (2010) holistically presented the 21st century skills that were classified as a result of studies conducted by various institutions, organizations and projects such as The Partnership for 21st Century Skills (P21), The North Central Regional Education Laboratory (NCREL), Assessment & Teaching of 21st Skills (ATCS21), National Educational Technology Standards (NETS/ISTE), European Union (EU), and the Organization for Economic Co-operation and Development (OECD). This classification is presented in Table 1.

In addition to the various international institutions and organizations listed above, there are various definitions and classifications of different researchers on 21st century skills (Anagün et al., 2016; Kang et al., 2010; Orhan Göksün, 2016; Pedro, 2006; Trilling & Fadel, 2009; Wagner, 2008).

Table 1. Conceptualization of 21st century skills in different frameworks

P21 (Partnership for 21st Century Skills)	NCREL en Gauge (North Central Regional Educational Laboratory)	ATCS (Assessment and Teaching of 21 Century Skills)	NETS/ISTE (National Educational Technology Standards)	EU (European Union)	OECD (Organisation for Economic Cooperation and Development)
Learning and Renewal Skills 1) Creativity and renewal, 2) Critical Thinking and Problem Solving, 3) Communication and Cooperation	Creative thinking 1) Compliance, crisis management, self-management 2) curiosity, creativity, and risk taking 3) Higher order thinking, reasoning	Ways of Thinking 1) Creativity and innovation 2) Critical thinking, problem solving and decision making, 3) Learning to learn, metacognition	Creativity and Innovation, Creative thinking, structuring, and transforming information into products and using technology in the process Critical thinking, problem solving and decision making	Learning to learn Communication 1) Communication in the mother tongue 2) Communication in a foreign language	Interaction with Heterogeneous Groups 1) Building good relationships with others 2) Working as a team in cooperation 3) Crisis management and resolution
Life and Career Skills Flexibility and Adaptability Enterprise and Self-Management Social and Intercultural Skills Leadership and Responsibility	Effective communication 1) Teamwork, cooperation, and interpersonal skills 2) Personal and social responsibility 3) interactive communication	Ways to Work 1) Communication, 2) Cooperation (Teamwork)	Communication and Cooperation -Digital media usage -Communication -Collaborative working	Digital competence	Use of interaction tools 1) Use of language, symbols, and text 2) Use of information 3) Use of technology
Information, Media, and Technology Skills Information literacy Media literacy Technology literacy	Digital Age literacy 1) Basic scientific, economic, and technological literacy 2) Visual and information literacy 3) Multicultural literacy and global awareness.	Working Tools 1) Information literacy 2) Information, Communication and Technology Literacy	Technological Applications and Concepts -Understanding the meaning, systems, and applications of technology	Cultural awareness and expression 1) Social competences 2) Sense of initiative and entrepreneurship	Act autonomously 1) Moving through the big picture 2) Creating and running life plans and personal projects 3) Defending interests and needs
	High Productivity 1) Prioritize, plan, manage to achieve results 2) Using real life tools effectively 3) Production ability and high quality	Living on Earth 1) Local and global citizenship, 2) Life and career skills, 3) Personal and social responsibility (Global awareness and competence)	Research and Information Fluency -Using digital tool applications to obtain, use and evaluate information		
			Digital Citizenship -Understanding cultural and social issues through technology		

Although the definitions and classifications of the relevant institutions, organizations and researchers contain different expressions, they are generally parallel to each other. Considering these definitions, individuals with 21st century skills are expected to be able to use higher order thinking skills such as critical and creative thinking, problem solving and decision making effectively; to structure information; to keep up with technological developments and changes; to

have advanced communication skills in mother tongue and foreign languages; to have digital competence; and to be socially compatible, cooperative, and flexible.

Unexpected events in the world can radically change old lives. It is not very difficult for a development experienced in any location of the world to reach another location in today's world where borders have disappeared. As a matter of fact, the COVID-19 epidemic, which has affected the world, clearly shows this situation. This epidemic, which caused the emergence of a new and unusual world order, deeply affected, and changed all countries and all areas. New developments emerging as a result of technological progress, just like epidemics, create different lives in today's world. Countries and individuals who cannot adapt to these lives are desperately behind the times. It is possible to observe this situation in a concrete way in the century we live in. Considering the continuity of change, raising individuals who adapt to different situations and take action is a vital necessity in the 21ˢᵗ century.

As a result of afore mentioned developments, while all fields are experiencing rapid change, it is out of the question that educational environments and practices are not affected by these developments. According to Orhan Göksün and Kurt (2017, p. 107) "This effect has caused transformation in many areas from technologies used in schools to teacher competencies. Learners and teachers, who are the stakeholders of the education system, are among the biggest actors of this transformation." In order for the mentioned transformation to take place as desired, responsible institutions, organizations and individuals in the education system should take steps by taking into account the characteristics and expectations of today. Motallebzadeh et al. (2018) point out that today's classrooms are much different from the memorized classrooms in terms of teachers, students, teaching materials, and their interrelationships. These differences have revealed a new understanding of education. According to this understanding, what is expected from the education system is to determine individual characteristics according to the needs of the 21ˢᵗ century information society and to raise students with the anticipated skills and competencies. For the first time in Turkey, these skills and competencies in terms of learners were mentioned in a study conducted to determine the new millennium professional requirements by Turkish Industry and Business Association (TÜSİAD, 1999). In the study, individual characteristics of the new millennium have been revealed by shedding light on the professions of the future.

Considering the 21ˢᵗ century skills defined in different terms, it is seen that the concept of literacy is also on the common ground. The concept of literacy, which is among the mentioned skills, and the concept of traditional literacy differ. Bozkurt and Coşkun (2018) states that the concept of literacy brings to mind the skills for reading, writing, speaking and listening. But today, as people use very different forms of expression and communication in daily life, the concept of literacy has begun to be defined as the ability to share meaning through symbol systems in order to fully participate in society. Thus, new types of text and new types of literacy emerge. These include terms such as information literacy, media literacy, media education, visual literacy, news literacy, health media literacy and digital literacy. Kurudayıoğlu and Tüzel (2010) state that there is a difference in meaning between the concepts of literacy and reading-writing, which are used interchangeably in everyday language. They explained this phenomenon with the image of literacy based on analyzing letters on paper against the image of literacy based on making meaning that expands its field by combining with new terms (i.e., media literacy, visual literacy, etc.) day by day.

All educational institutions and their stakeholders have important roles in raising individuals with the specified skills. It is necessary to be aware that the qualified human type defined by the 21ˢᵗ century cannot be reached only with a one-dimensional transfer of information, and changes and developments should take place with this perspective. Being able to be an information literate who knows how to access information, can structure information and uses the information appropriately by making sense; a technology literate who understands what technology is, understands the importance of using technology in individual and social terms, and knows how to use technology; a visual literate who can understand visual messages correctly and produce conscious visual messages; and a digital literate who has the ability to easily access digital resources and use them properly for their intended purpose are among the qualifications of individuals sought by many people today. According to Hobbs (2010), these interrelated terms describe the set of competences necessary for success in contemporary society.

Fundamental changes in the education system undoubtedly affect all stakeholders in the education system. However, teachers, who are the planners and implementers of the teaching processes, are the people most affected by the mentioned changes. According to Şengül (2012, p. 1), "The understanding of change towards raising individuals who will create the conditions of the future made itself felt mostly in the duties and responsibilities of teachers." The fact that teachers can effectively fulfill their new duties and responsibilities during these changes and convey their positive reflections is closely related to their various qualifications. Having a sensitive function to carry the responsibility of human life requires teachers to be individuals who are open to development, constantly renewing themselves, and equipped.

Due to the multivariate and complex structure of the education and training process, the Ministry of National Education General Directorate of Teacher Training and Development has determined the professional competencies that teachers should have (MEB, 2017) as well as special field competencies according to their branches (MEB, 2008) to help and guide the difficulties that teachers experience in determining their development areas. However, it should not be forgotten that teachers' general and special field competencies should be evaluated together as they constitute integrity.

It is extremely important for teachers from all branches to carry out studies by considering their own special field competencies and to develop themselves according to these

criteria. However, it would not be wrong to say that the Turkish course and Turkish teachers have a special importance in terms of being the basis for other branches at this point. Iskender et al. (2015) state that Turkish teachers have a different and more important place in terms of education and training than teachers from other branches, and they emphasize that it is Turkish teachers who fulfill the responsibility and duty of transferring the richness and beauty of our language to future generations. Temizyürek and Aksoy (2016) also stated that the Turkish lesson is a mother tongue lesson for Turkish children, that the teacher of this lesson has more responsibilities than other teachers, and that the achievements of the Turkish lesson are not limited to the Turkish lesson alone.

Teaching native language is generally expected to provide individuals with linguistic skills and habits related to understanding and explaining. As the individual reaches competence in these skills; communication power rises, emotional and thought structure expands, socialization processes develop, and a balanced and healthy personality structure is gained. Turkish lessons provide individuals with life-long knowledge and skills (Sever, 2011). All these show that the level of reaching the achievements and competencies in Turkish lessons affects the success and competencies in other lessons.

In Turkish course, which is a skill course, the acquisition and development of the 21st century learner skills are more prominent than other courses. In this sense, Turkish course is one of the courses that should be emphasized throughout the teaching and learning process. In the Turkish course curriculum (MEB, 2019), it is emphasized that our education system aims to raise individuals who have the knowledge, skills and behaviors integrated in competencies. The competencies that students need in their personal, social, academic, and business life at both national and international level are determined in Turkey Qualifications Framework. These competencies are gathered under eight headings as "Communication in the mother tongue", "Communication in foreign languages", "Mathematical competence and basic competencies in science/technology", "Digital competence", "Learning to learn", "Social and civic competencies", "Taking initiative and entrepreneurship", and "Cultural awareness and expression."

In the context of Turkish courses, it can be said that Turkish language teachers have an important role in students' having these competencies. Teachers can change student performance positively as long as they can use methods and techniques suitable for the target audience and effectively demonstrate their pedagogical skills. In order for teachers to internalize these skills, they are expected to be able to use the aforementioned skills effectively while being learner as a pre-service teacher. From this point of view, it was aimed to determine the 21st century learner skills usage levels of Turkish language teacher candidates in terms of some variables. For this purpose, answers will be sought for the following questions:

1. What are the 21st century learner skills usage levels of Turkish language teacher candidates?

2. Do the 21st century learner skills usage levels of Turkish language teacher candidates differ according to:
   a. their gender
   b. their grade levels
   c. their success situation?

3. What is the relationship between the sub-dimensions of 21st century learner skills (cognitive skills, autonomous skills, collaboration and flexibility skills, innovative skills) used by Turkish language teacher candidates?

METHOD

Research Model

This study was carried out by using singular screening, causal comparison, and relational screening models together within the framework of quantitative research approaches. A singular screening model was used to reveal the 21st century learner skills usage levels of Turkish language teacher candidates. "Singular screening models are the research models conducted to determine the occurrence of variables individually, as type or quantity" (Karasar, 2014, p.79). In addition, in the study, the causal comparison model was used to test whether the use of 21st century learner skills differed in terms of independent variables (gender, grade level and success status). Causal comparison studies "aims to determine the causes and consequences of differences between groups of people without any intervention on the circumstances and participants" (Büyüköztürk et al., 2018, p.17). Finally, the relational screening model was used in the study to examine the relationship between the sub-dimensions of the mentioned skills. Relational screening research is used to reveal possible relationships between two or more variables or to predict these possible relationships (Fraenkel et al., 2012).

Universe and Sample

The study population of the research consists of a total of 259 students studying at Balikesir University Necatibey Faculty of Education, Department of Turkish and Social Sciences Education, Turkish Education Program in the 2018-2019 academic year. Sampling was not used in the study; it was tried to reach the entire study universe. The data regarding the personal information of the participants in the study universe are presented in Table 2.

Data Collection Tools

The "21st Century Learner Skills Usage Scale" developed by Orhan Göksün (2016) was used as the data collection tool. The scoring of the five-point Likert-type scale consisting of 31 items was made from never (1) to always (5). The 31 items in the scale were gathered under four factors as cognitive skills, autonomous skills, collaboration and flexibility skills, and innovation skills. The highest score that can be obtained from the scale is 155 (31×5=155) and the lowest score is 31 (31×1=31). In case the total score is expressed as the total score average, it is seen that the highest score that

Table 2. Data regarding the demographics of participants

Category	Definition	Teacher Candidates	
		f	*%*
Gender	Female	167	64.4
	Male	92	35.6
	Total	259	100
Grade level	1st Grade	55	21.2
	2nd Grade	72	27.8
	3rd Grade	68	26.2
	4th Grade	64	24.8
	Total	259	100
Success Status	Level 1	8	3.1
	Level 2	24	9.3
	Level 3	58	22.4
	Level 4	84	32.4
	Level 5	73	28.2
	Level 6	12	4.6
	Total	259	100

Table 3. Turkish language teacher candidates' scores from the 21st century learner skills usage scale

	Number of Students (*n*)	Mean (*M*)	Standard Deviation (*SD*)
Cognitive Skills	259	3.79	.45
Autonomous Skills	259	3.76	.61
Collaboration and Flexibility Skills	259	3.46	.61
Innovation Skills	259	3.48	.81
Whole Scale	259	3.70	.43

can be obtained from the scale is 5 (31×5=155, 155/31=5) and the lowest score is 1 (31×1=31, 31/31=1).

With the name "Cognitive Skills" selected for the first factor in the scale, the processing and coding of information in mental processes and awareness of the products that occur as a result of the performed mental processes are explained. "Autonomous Skills" describes the autonomous learning skills that emerge with the integration of self-management, self-control, individual or group working skills. "Collaboration and Flexibility Skills" signifies the success of cooperative activities and to make learning environments flexible by expanding them. Although "Innovation Skills" has a much more detailed definition, it is used as a factor name in this study to mean adaptation to new technologies. The alpha value of the test as the internal consistency coefficient was.89. In this study, the reliability of the scale was found to be.85.

Data Analysis

In the analysis of the data obtained at the end of the research, firstly, the mean, mode, median, skewness and kurtosis values of the variables were calculated, and it was seen that the data showed a normal distribution. After this analysis, mean for descriptive analysis, independent samples *t*-test and one-way analysis of variance (ANOVA) techniques for comparisons made by the related variables were used.

FINDINGS

The findings for the sub-problem "What are the 21st century learner skills usage levels of Turkish language teacher candidates?" are presented in Table 3:

Since the 21st century learner skills usage score is calculated by standardizing, it is known that a pre-service teacher can get points in the range of 1-5. The fact that the Turkish language teacher candidates' 21st century learner skills usage score is higher than the middle score of 3 (*M* = 3.70) can be accepted as an indicator that pre-service teachers use 21st century learner skills at a level above average. However, this average is not very close to the highest score of 5. For this reason, it can be said that pre-service teachers' use of the mentioned skills is not at high levels. In addition, it is seen that Turkish language teacher candidates got the highest score from the cognitive skills factor of the 21st century learner skills and the lowest score from the collaboration and flexibility skills factor in the Table 3.

Findings regarding whether the 21st century learner skills usage levels of Turkish language teacher candidates differ according to gender, grade level and success status are presented in Tables 4 and 5 and Table 6, respectively.

At the end of the independent samples *t*-test conducted to determine whether the 21st century learner skills usage levels of teacher candidates differ according to gender; a statistically significant difference was found between the average scores of innovation skills at p <.05 level. Looking at the average scores, it was observed that this difference was in favor of males. In other words, it was concluded that the average score of males' innovation skills was higher than that of females and this difference was significant. In order to determine the effect of the variable on differentiation, Cohen's *d* value was calculated. According to this calculation, it can be said that the effect of the gender variable on differentiation was low.

At the end of the one-way analysis of variance test, which was conducted to determine whether the 21st century learner skills usage levels of teacher candidates differ according to grade level, a statistically significant difference was found between groups in cognitive skills, innovation skills, and the whole scale. For the effect of the differences found, eta-squared values (η^2) were calculated, and it was determined that the effect levels were low. Levene test for homogeneity of variance from complementary statistics and post-hoc tests for differences were used to examine which groups the difference was. As a result of the Levene test, the homogeneity of the variances was tested and Scheffe, one of the post-hoc tests, was applied for those whose variances were homogeneously distributed, and the Games-Howell test was applied for those that did not.

As a result of the analysis, it was observed that:

- The difference between the levels of using cognitive skills was between 4th graders and other grades (3rd, 2nd, and 1st) and in favor of 4th graders,

Table 4. t-Test results of 21st century learner skills usage of turkish language teacher candidates according to gender

	Groups	N	M	SD	SE$_{\bar{x}}$	t	df	p	Difference	Effect Size (Cohen's d)
						t-Test				
Cognitive Skills	Female	167	3.81	.45	.03	.744	257	.457		
	Male	92	3.76	.46	.05					
Autonomous Skills	Female	167	3.78	.56	.04	.580	257	.562		
	Male	92	3.73	.68	.07					
Collaboration and Flexibility Skills	Female	167	3.51	.57	.04	1.741	257	.083		
	Male	92	3.38	.66	.07					
Innovation Skills	Female	167	3.36	.81	.06	-3.326	257	.001	M>F	.43
	Male	92	3.70	.75	.08					
Whole Scale	Female	167	3.72	.43	.03	.659	257	.511		
	Male	92	3.68	.45	.05					

Table 5. The results of the one-way analysis of variance test conducted to determine whether 21st century learner skills usage levels of turkish language teacher candidates differ according to grade level

	Group	N	M	SD	F	p	Effect Size	Difference
			ANOVA Results					
Cognitive Skills	1st Grade	55	3.71	.35	6.146	.000	.26	4>1
	2nd Grade	72	3.76	.45				4>2
	3rd Grade	68	3.71	.45				4>3
	4th Grade	64	3.99	.48				
	Total	259	3.79	.45				
Autonomous Skills	1st Grade	55	3.79	.46	.294	.830		
	2nd Grade	72	3.75	.56				
	3rd Grade	68	3.71	.66				
	4th Grade	64	3.80	.71				
	Total	259	3.76	.61				
Collaboration and Flexibility Skills	1st Grade	55	3.37	.49	1.878	.134		
	2nd Grade	72	3.46	.55				
	3rd Grade	68	3.41	.69				
	4th Grade	64	3.61	.65				
	Total	259	3.46	.61				
Innovation Skills	1st Grade	55	3.52	.71	5.087	.002	.24	4>2
	2nd Grade	72	3.28	.86				4>3
	3rd Grade	68	3.38	.81				
	4th Grade	64	3.78	.74				
	Total	259	3.48	.81				
Whole Scale	1st Grade	55	3.65	.35	4.341	.005	.22	4>1
	2nd Grade	72	3.67	.42				4>2
	3rd Grade	68	3.63	.47				4>3
	4th Grade	64	3.87	.45				
	Total	259	3.70	.44				

- The difference between the levels of using innovation skills was between 4th graders and 3rd and 2nd graders and in favor of 4th graders,

- The difference between the mean scores of the whole scale was between 4th graders and other grades (3rd, 2nd, and 1st), and in favor of 4th graders.

Table 6. Results of the one-way analysis of variance test conducted to determine whether 21ˢᵗ century learner skills usage levels of turkish language teacher candidates differ according to their success status

		ANOVA Results					**Effect Size**	**Difference**
	Group	**N**	**M**	**SD**	**F**	**p**		
Cognitive Skills	Lower	32	3.69	.42	1.594	.205		
	Middle	142	3.78	.46				
	Upper	85	3.85	.44				
	Total	259	3.79	.45				
Autonomous Skills	Lower	32	3.46	.61	5.467	.005	.20	Middle, Upper >Lower
	Middle	142	3.77	.62				
	Upper	85	3.87	.56				
	Total	259	3.76	.61				
Collaboration and Flexibility Skills	Lower	32	3.10	.75	8.136	.000	.25	Middle, Upper >Lower
	Middle	142	3.47	.61				
	Upper	85	3.59	.50				
	Total	259	3.46	.61				
Innovation Skills	Lower	32	3.38	.67	.621	.538		
	Middle	142	3.53	.85				
	Upper	85	3.44	.78				
	Total	259	3.48	.81				
Whole Scale	Lower	32	3.51	.37	4.486	.012	.18	Upper > Lower
	Middle	142	3.70	.45				
	Upper	85	3.78	.41				
	Total	259	3.70	.44				

In order to compare the 21ˢᵗ century learner skills usage levels of Turkish language teacher candidates according to their grade point averages (GPA), firstly, the students' grade point averages were grouped as Lower Level (0.01-2.00), Middle Level (2.01-3.00) and Upper Level (3.01-4.00) and the 21ˢᵗ century learner skills usage levels of the teacher candidates were compared in terms of GPA variable.

When Table 6 is examined, it was seen that there was a statistically significant difference between groups in terms of autonomous skills, collaboration and flexibility skills and the whole scale. In addition, the higher the level of success, the higher the average scores of skill use values were observed. For the effect of the differences found, eta-squared values (η^2) were calculated, and it was determined that the effect levels were low. Complementary statistics have been made to examine which groups the difference was between.

As a result of the analysis, it was observed that:

- The difference between the levels of using autonomous skills was between upper and middle levels and lower levels, and in favor of upper and middle levels,
- The difference between the levels of using collaboration and flexibility skills was similarly between upper and middle levels and lower levels and in favor of upper and middle levels,
- The difference between the average scores of the whole scale was between the upper level and the lower level and in favor of the upper level.

Findings regarding the relationship between sub-dimensions of the 21ˢᵗ century learner skills (cognitive skills,

autonomous skills, collaboration and flexibility skills, innovation skills) used by Turkish language teacher candidates are presented in Table 7.

When Table 7 is examined:

- A moderate linear relationship was found between cognitive skills and autonomous skills, collaboration and flexibility skills, and a low level relationship with innovation skills. In addition, a very high level of linear relationship was found between cognitive skills and the whole scale.
- A moderate linear relationship was found between autonomous skills and cognitive skills, collaboration and flexibility skills, and a high level of linear relationship was found between autonomous skills and the whole scale.
- There was a moderate linear relationship between collaboration and flexibility skills and cognitive skills, autonomous skills, and the whole scale, while a low level of relationship was found with innovation skills.
- A low and medium level linear relationship was found between innovation skills and other dimensions, and a medium level relationship with the whole scale.

DISCUSSION, CONCLUSION AND SUGGESTIONS

In this study, which aimed to determine the 21ˢᵗ century learner skills usage levels of Turkish language teacher candidates in terms of some variables, it was concluded that

Table 7. Relationship between sub-dimensions of the 21st century learner skills used by turkish language teacher candidates

	M	SD	1	2	3	4	5
(1) Cognitive Skills	3.79	.45	1	.519**	.583**	.371**	.905**
(2) Autonomous Skills	3.76	.61		1	.552**	.461**	.770**
(3) Collaboration and Flexibility Skills	3.46	.61			1	.365**	.795**
(4) Innovation Skills	3.48	.81				1	.523**
(5) Whole Scale	3.70	.43					1

**p<.01

firstly, pre-service teachers used 21st century learner skills at a level above the average. However, since the average scores of the participants were not very close to the 5, which is the highest score, it can be said that pre-service teachers' use of the mentioned skills was not at high levels. In the study conducted by Güler (2019), it was determined that 141 teacher candidates studying in the Department of Physical Education and Sports Teaching had 21st century skills above the average level. Günüç et al. (2013) determined in their study that pre-service teachers were aware of what 21st century student characteristics should be. Since it was concluded in our study that Turkish language teacher candidates used their 21st century learner skills above average, it can be said that the pre-service teachers were aware of the afore-mentioned skills.

In the study, it was found that Turkish language teacher candidates mostly used their cognitive skills among the 21st century learner skills, and at least their collaboration and flexibility skills. The fact that cognitive skills are the most used skills can be explained by the existence of an education system that requires students to operate their cognitive processes more. According to Young and Daunic (2012), instructional activities designed by teachers who cannot understand the expectations of 21st century learners only enable cognitive processes. Orhan Göksün (2016), in his study to determine the relationship between 21st century learner skills and 21st century teaching skills of pre-service teachers and to compare the use of both skills in terms of gender, university and department variables, determined that pre-service teachers used skills related to four sub-dimensions of 21st century learner skills (cognitive skills, autonomous skills, collaboration and flexibility skills, and innovation skills) above the average level. It was determined that the pre-service teachers used cognitive skills the most and autonomous skills the least among the mentioned dimensions. In addition, studies conducted in international literature (Chalkiadaki, 2018; Clark, 2008; Garba et al., 2015) reveal that teachers' technological pedagogical content knowledge and usage levels are low and the importance of information and communication technology in 21st century skills. Deficiencies in adaptation to information, communication, and technological innovations within the scope of 21st century innovation skills open the door to a system in which classical teaching methods are used, only information is transferred, and cognitive processes are operated in one direction. Therefore, the transformation of our education system and its stakeholders towards 21st century learner skills can be seen as an important step for the development of the next generations. On the other hand,

the least use of collaboration and flexibility skills can be interpreted as students avoiding collaborative activities and making learning environments flexible by expanding them.

Based on the findings of the research related to the gender variable, it was concluded that the cognitive skills, autonomous skills and collaboration and flexibility skills usage levels of teacher candidates did not differ according to gender, but there was a significant difference in favor of males between the average scores of innovation skills. Since innovation skills were limited to using technological innovations in the measurement tool used in the research, this result can be interpreted as male participants are more interested in technological innovations. Erdoğan (2020), in his study examining the relationship between 21st century skills and lifelong learning tendencies of Turkish language teacher candidates, found that 21st century skills did not differ according to gender, grade level, the type of high school graduated, the desire for graduate education, and the habit of reading books. This finding coincides with the finding that Turkish language teacher candidates' levels of cognitive skills, autonomous skills, and collaboration and flexibility skills use did not differ according to gender. Karakaş (2015), on the other hand, found in his research that middle school eighth grade students have a high level of cognitive, affective, and sociocultural dimensions of 21st century skills. Among the 21st century skill levels according to gender, a significant difference was found in favor of female students. These findings determined by Karakaş (2015) differ from the findings of our study according to the gender variable.

Considering the findings regarding whether the 21st century learner skills usage levels of the teacher candidates differ according to the grade level, it is seen that there is a statistically significant difference between the grade levels in terms of cognitive skills, innovation skills and whole scale. It was concluded that the difference was in favor of the 4th graders both in the whole scale and in the sub-dimensions of cognitive and innovation skills; in other words, as the grade level of the teacher candidates increased, the level of using 21st century learner skills also increased. This situation can be interpreted as the effect of the courses taken by the participants during their undergraduate education and the preparations for the central exams that they have to take in order to be appointed as a teacher. Zeybek (2019) found in his study that high school students used 21st century learner skills and skills related to four sub-dimensions (cognitive skills, autonomous skills, collaboration and flexibility skills, and innovation skills) above the average level. In the study, it was determined that students' use of 21st century learner

skills differed significantly in favor of 11ᵗʰ and 12ᵗʰ grades in terms of cognitive and collaboration and flexibility skills sub-dimensions in terms of grade levels. These results are similar to the findings of our study. Bozkurt and Çakır (2016) tried to determine whether there was a significant difference between 21ˢᵗ century learning skill levels of middle school students according to their gender and grade level and the scale developed by the researchers was given to 612 middle school students. In the study, it was observed that there were significant differences in the level of having these skills by the students according to the grade level and gender. Female students have a higher level of using these skills than male students. However, it was observed that as the grade level increased, the level of using these skills decreased similarly in male and female students. These results differ from the results of our study. It can be interpreted that the level of using these skills has decreased due to ignoring the 21ˢᵗ century skills that need to be acquired, as an exam-oriented education process begins as we move from middle school to high school education.

One of the questions for which an answer was sought in the study was "Do the 21ˢᵗ century learner skills usage levels of Turkish language teacher candidates differ according to their success?" As a result of the comparison, it was found that the difference in the whole scale was between the upper level and lower level success groups and in favor of the upper level. In the sub-dimensions of autonomous skills and collaboration and flexibility skills, the scale was found to be in favor of the upper and middle levels and lower level success groups and in favor of the upper and middle levels. Based on this, it can be said that as the success of students increases, their level of using 21ˢᵗ century learner skills also increase.

Finally, in the study, an answer to the question of "What is the relationship between the sub-dimensions of 21ˢᵗ century learner skills (cognitive skills, autonomous skills, collaboration and flexibility skills, innovative skills) used by Turkish language teacher candidates?" was sought. In this context, there is a very high and high level relationship in a linear direction between the cognitive skills and autonomous skills of the teacher candidates and their 21ˢᵗ century learner skills, respectively; while a moderate relationship was found between collaboration and flexibility skills and innovation skills of the teacher candidates and their 21ˢᵗ century learner skills. In other words, while teacher candidates' use of 21ˢᵗ century learner skills mostly affected cognitive skills; it was followed by autonomous skills, collaboration and flexibility skills, and innovation skills, respectively. In addition, in the study, it was concluded that there was a moderate and low level linear relationship between cognitive skills, autonomous skills, collaboration and flexibility skills and innovation skills.

The changes and developments experienced directly affect education. What is expected from education is to prepare individuals for life and to raise the human profile needed by the time period. The learner skills that a 21ˢᵗ century individual needs have been defined by various sources. The extent to which learners and teachers have these skills has been revealed through various studies. The common point

determined in this study and similar studies is that students generally do not use these skills at a high level. The organization of the curriculum of the education faculties, which are directly responsible for teacher training, on the basis of 21ˢᵗ century skills is seen as the first and most fundamental step to be taken in order both the learner and the teacher to use the skills mentioned at a high level.

It is important to note that 21ˢᵗ century skills describe dynamic skills rather than fixed, static skills. From this point of view, prioritizing change, renewal and adapting to new situations at the basic level and planning teaching practices from this perspective will be valuable for today's learners. The presentation of 21ˢᵗ century skills by associating them with the Turkish Qualifications Framework, the General Competencies of Teaching Profession, and Special Field Qualifications can facilitate the use of these skills by pre-service teachers when they start their profession. It can also strengthen their belief in the importance of these skills.

Teacher candidates should be evaluated with various measurement tools that measure their 21ˢᵗ century skills competencies throughout their education and training processes. According to the results of these evaluations, individual referrals can be made during the process. Considering the existing research, new research can be conducted on how to effectively develop 21ˢᵗ century skills in learners, how to follow these development processes effectively, and what steps to take as a result of the determinations.

REFERENCES

Anagün, Ş. S., Atalay, N., Kılıç, Z. & Yaşar, S. (2016). Öğretmen adaylarına yönelik 21. yüzyıl becerileri yeterlilik algıları ölçeğinin geliştirilmesi: Geçerlik ve güvenirlik çalışması [Developing 21ˢᵗ century skills competence perceptions scale for prospective teachers: A validity and reliability study]. *Pamukkale University Journal of Education, 40*(40), 160-175. http://dx.doi.org/10.9779/PUJE768

Bozkurt, F. & Çoşkun, D. (2018). 21. YY Okuryazarlığı: Öğretmen Adaylarının Medya Algılarına Genel Bir Bakış. *Erciyes İletişim Dergisi, 5*(4), 493-511. https://dergipark.org.tr/tr/pub/erciyesiletisim/issue/38659/381046

Bozkurt, Ş., & Çakır, H. (2016). Ortaokul öğrencilerinin 21. yüzyıl öğrenme beceri düzeylerinin cinsiyet ve sınıf seviyesine göre incelenmesi [Investigation of 21ˢᵗ century learning skill levels of middle school students by gender and grade level]. *Pamukkale University Journal of Education, 39*(39), 69-82. http://dx.doi.org/10.9779/PUJE757

Büyüköztürk, Ş., Kılıç Çakmak, E., Akgün, Ö. E., Karadeniz, Ş., & Demirel, F. (2018). *Bilimsel araştırma yöntemleri* (25ᵗʰ edition) [Scientific research methods]. Pegem Akademi.

Chalkiadaki, A. (2018). A systematic literature review of 21ˢᵗ century skills and competencies in primary education. *International Journal of Instruction, 11*(3), 1-16. https://doi.org/10.12973/iji.2018.1131a

Clark, D. D. (2008). *A study of West Virginia teachers: Using 21ˢᵗ century tools to teach in a 21ˢᵗ century context*

[Unpublished doctoral dissertation]. Marshall University Graduate School of Education and Professional Development, West Virginia. https://mds.marshall.edu/etd/535

Erdoğan, D. (2020). *Türkçe öğretmen adaylarının 21. yüzyıl becerileri ile yaşam boyu öğrenme eğilimleri arasındaki ilişkinin incelenmesi* [Investigation of the relationship between 21st century skills and lifelong learning tendencies of Turkish teacher candidates, Unpublished master's thesis]. Zonguldak Bülent Ecevit Üniversitesi Sosyal Bilimler Enstitüsü, Zonguldak.

Fraenkel, J. R., Wallen, N. E. & Hyun, H. H. (2012). *How to design and evaluate research in education* (8th edition). McGraw-Hill.

Garba, S. A., Yusuf, B., & Busthami, A. H. (2015). Toward the use of 21st century teaching-learning approaches: The trend of development in Malaysian Schools within the context of Asia Pacific. *International Journal of Emerging Technologies in Learning, 10*(4), 72-29. http://dx.doi.org/10.3991/ijet.v10i4.4717

Güler, Y. (2019). *Beden eğitimi ve spor öğretmenliği bölümü öğrencilerinin 21. yüzyıl becerileri öz-yeterlik algıları* [21st century skills self-efficacy perceptions of students studying in physical education and sports teaching department, Unpublished master's thesis]. Ankara Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Günüç, S., Odabaşı, H. F., & Kuzu, A. (2013). 21. yüzyıl öğrenci özelliklerinin öğretmen adayları tarafından tanımlanması: Bir Twitter uygulaması [Identification of 21st century student characteristics by prospective teachers: A Twitter activity]. *Eğitimde Kuram ve Uygulama, 9*(4), 436-455.

Hobbs, R. (2010). *Digital and media literacy: A plan of action*, by The Aspen Institute Communications and Society Program. https://www.aspeninstitute.org/wp-content/uploads/2010/11/Digital_and_Media_Literacy.pdf

İskender, H., Yiğit, F. & Bektaş, R. (2015). Türkçe öğretmenlerinin özel alan yeterliklerine yönelik görüşlerinin çeşitli değişkenler açısından incelenmesi [Examining the opinions of Turkish teachers about special field competencies in terms of various variables]. *Uluslararası Türkçe Edebiyat Kültür Eğitim Dergisi, 4*(1), 305-327. https://dergipark.org.tr/tr/pub/teke/issue/12853/155841

Kang, M., Heo, H., Jo, I., Shin, J., & Seo, J. (2010). Developing an educational performance indicator for new millennium learners. *Journal of Research on Technology in Education, 43*(2), 157-170. https://doi.org/10.1080/15391523.2010.10782567

Karakaş, M. M. (2015). *Ortaokul sekizinci sınıf öğrencilerinin fen bilimlerine yönelik 21. yüzyıl beceri düzeylerinin ölçülmesi* [Measuring 21st century skill levels of middle school eighth grade students towards science, Unpublished master's thesis]. Eskişehir Osmangazi Üniversitesi Eğitim Bilimleri Enstitüsü, Eskişehir.

Karasar, N. (2014). *Bilimsel araştırma yöntemi* (27th ed.). [Scientific research method]. Nobel Akademik.

Kurudayıoğlu, M. & Tüzel, S. (2010). 21. Yüzyıl Okuryazarlık Türleri, Değişen Metin Algısı ve Türkçe Eğitimi. *Türklük Bilimi Araştırmaları, 28,* 283-298. https://dergipark.org.tr/tr/pub/tubar/issue/16969/177280.

MEB. (2008). Türkçe öğretmeni özel alan yeterlikleri [Turkish teacher special field competencies]. https://oygm.meb.gov.tr/meb_iys_dosyalar/2017_11/06160031_1-YYretmen_Yeterlikleri_KitabY_tYrkYe_YYretmeni_Yzel_alan_yeterlikleri_ilkYYretim_parYa_4.pdf

MEB. (2017). Öğretmenlik mesleği genel yeterlikleri [General competencies of the teaching profession]. http://oygm.meb.gov.tr/meb_iys_dosyalar/2017_12/11115355_YYRETMENLYK_MESLEYY_GENEL_YETERLYKLERY.pdf

MoNE. (2019). *Türkçe Dersi Öğretim Programı (İlkokul ve Ortaokul 1, 2, 3, 4, 5, 6, 7 ve 8)* [Turkish Course Curriculum (Primary and Secondary School 1, 2, 3, 4, 5, 6, 7 and 8)]. Ministry of National Education. https://mufredat.meb.gov.tr/ProgramDetay.aspx?PID=663

Motallebzadeh, K., Ahmadi, F., & Hosseinnia, M. (2018). Relationship between 21st century skills, speaking and writing skills: A structural equation modelling approach. *International Journal of Instruction, 11*(3), 265-276. https://doi.org/10.12973/iji.2018.11319a

Orhan Göksün, D. (2016). *Öğretmen adaylarının 21. yy öğrenen becerileri kullanımları ve 21. yy öğreten becerileri kullanımları arasındaki ilişki* [The relationship between pre-service teachers' uses of 21st century learner skills and 21st century teacher skills, Unpublished doctoral dissertation]. Anadolu Üniversitesi Eğitim Bilimleri Enstitüsü, Eskişehir.

Orhan Göksün, D., & Kurt, A. A. (2017). Öğretmen adaylarının 21. yy öğrenen becerileri kullanımları ve 21. yy öğreten becerileri kullanımları arasındaki ilişki [The relationship between pre-service teachers' uses of 21st century learner skills and 21st century teacher skills]. *Eğitim ve Bilim, 42*(190), 107-130. http://dx.doi.org/10.15390/EB.2017.7089

Pedro, F. (2006). The new millennium learners: Challenging our views on ICT and learning. http://www.oecd.org/education/ceri/38358359.pdf

Sever, S. (2011). *Türkçe öğretimi ve tam öğrenme* (5. baskı) [Turkish teaching and full learning 5th ed.]. Anı yayıncılık.

Şengül, K. (2012). *Türkçe öğretmenlerinin özel alan yeterlikleri: Bir durum belirleme çalışması* (Yayımlanmamış yüksek lisans tezi) [Special field competencies of Turkish teachers: A case study (Unpublished master's thesis)]. Fırat Üniversitesi Eğitim Bilimleri Enstitüsü, Elazığ.

Temizyürek, F. & Aksoy, T. (2016). Türkçe öğretmenlerinin özel alan yeterlikleri üzerine bir inceleme [An investigation on the special field competencies of Turkish teachers]. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi, 38,* 103-117. https://dergipark.org.tr/tr/download/article-file/227250

Trilling, B., & Fadel, C. (2009). *21st century skills: Learning for life in our times*. John Wiley & Sons.

TÜSİAD. (1999). *Türkiye'de mesleki ve teknik eğitimin yeniden yapılandırılması* [The restructuring of the vocational and technical education in Turkey]. Istanbul, TR: Lebib Yalkın Yayımları. https://tusiad.org/tr/yayinlar/raporlar/item/1852-turkiyede-mesleki-ve-teknik-egitimin-yeniden-yapilandirilmasi

Voogt, J., & Roblin, N. P. (2010). *21ˢᵗ century skills discussion paper*. Universiteit Twente.

Wagner, T. (2008). Th*e global achievement gap: Why even our best schools don't teach the new survival skills our children need-and what we can do about it*. Basic Books.

Young, J. S., & Daunic, R (2012). Linking learning: Connecting traditional and media literacies in 21ˢᵗ century learning. *Journal of Media Literacy Education, 4*(1), 70-81. https://digitalcommons.uri.edu/jmle/vol4/iss1/7

Zeybek, G. (2019). Lise öğrencilerinin 21. yüzyıl öğrenme becerileri kullanım düzeylerinin belirlenmesi [Determining the 21ˢᵗ century learning skills usage levels of high school students]. *International Journal of Social Sciences and Education Research, 5*(2), 142-156. https://doi.org/10.24289/ijsser.505263