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EXAMINATION OF CLASSROOM TEACHERS' 21st CENTURY TEACHING SKILLS
(Research article)

Correspondence:
Gökhan Coşanay,
İnönü University, Faculty of Education, Turkey
İnönü University
gokhancosanay44@hotmail.com

Yalçın Karalı
İnönü University, Faculty of Education, Turkey
İnönü University
yalcin.karali@inonu.edu.tr

Biodatas:

Gökhan Coçşanay graduated from Malatya İnönü University, Faculty of Education, Department of Classroom Teaching in 2008. He started to work as a classroom teacher in Şanlıurfa in 2008. He is still working as a classroom teacher in Yeşilyurt district of Malatya province, and at the same time continues his doctorate program in Malatya İnönü University Educational Sciences Institute Classroom Education.

Yalçın Karalı completed his undergraduate, graduate and doctoral studies at İnönü University. He graduated from Classroom Teaching undergraduate program and completed her master's degree in education programs and teaching science. He completed his doctorate in the field of classroom education, and has been working as a lecturer in the Department of Classroom Teaching at İnönü University, Faculty of Education, as of 2018.

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Gökhan Coşanay

gokhancosanay44@hotmail.com

Yalçın Karalı

yalcin.karali@inonu.edu.tr

Abstract

In recent years, the rapid developments in information and communication technologies have impacted education systems immensely. These developments not only made various updates in the education programs, but also brought up the skills that the teachers who train the learners of the new millennium should have. The aim of this study was to determine the level of use of the 21st century teacher skills required by the age of classroom teachers and to examine the level of use of these skills in terms of gender, graduation status and professional preference variables. In the study, a cross-sectional survey model, a quantitative research method, was adapted. The data were collected via "21. Century Learner and Teacher Skills Use Scale" developed by Göksun (2021). The participants were composed of 269 primary school teachers selected by simple random sampling method. The collected data were analyzed using the SPSS 22.0 program. Since the research data did not show a normal distribution, Mann-Whitney U tests were used for two-category variables, and Kruskal-Wallis tests were used for three or more categories. The results revealed that the classroom teachers' use of 21st century teacher skills was at a good level. It was also observed that the highest level of use among the sub-dimensions of 21st century teacher skills belonged to "approving skills"; and there was a significant difference in 21st century teacher skills sub-dimensions according to gender, graduation status and professional preference. The significant differentiation in favor of those who willingly choose the teaching profession in all sub-dimensions according to the vocational preference variable showed the importance of the professional interest and ability in the success of applying the 21st century skills required by the profession.

Keywords: 21st century teacher skills, classroom teacher, competences, professional interests

1. Introduction

From past to present, people felt the need to continue their lives by struggling with difficulties in many areas and to develop their competencies in order to keep up with the requirements of the age they are in (Tuğluk, 2019). In this struggle process, significant changes have occurred in the skills and behaviors that individuals need according to the different periods in which they live. E.g; while in the 19th and 20th centuries, people were expected to be active, quick-acting, honest, fair, hardworking, and able to get along well with others (Hamarat, 2019). In addition to these competencies in the age we live in; they are expected to be individuals equipped with metacognitive and social skills such as creativity, communication and cooperation, problem solving, decision making, critical thinking, information and communication technologies literacy (Yılmaz, 2016). It is thought that equipping the 21st century children, who are the students of today's educational institutions, with these skills will enable them to access information in every field and use the information they have accessed in a way that will benefit their environment (Bozkurt & Çakır, 2016). At

this point, 21st century learners, who are defined as “digital native” (Prensky, 2001; Al Khazaleh, 2021), and “new millennium student” (Pedró & OECD-CERI, 2006) in the literature, are the ones who develop with the changing world conditions. Equipping them with the skills to adapt and use these technologies will help them to be ready for the professions of the future (enGauge, 2003). It is stated that the responsibilities and influence of the teachers, with whom they spend most of their time, in equipping the students of today's society with these skills, and that the teachers who will train them should be equipped with these qualifications (Akdemir, 2013). For this purpose, many countries make some updates regarding the 21st century education in their education programs, and mostly primary and secondary education programs are at the center of these updates (Anagün, Atalay, Kılıç & Yaşar, 2016).

The 21st century teacher skills that teachers need to have in order for students to gain 21st century learner skills are defined as the teaching skills that teachers use to plan the learning-teaching process and increase the success of the learners (Göksün, 2016). The competencies required of teachers have been a crucial dimension of teacher training studies from the past to this day. While a group of researchers cares that teachers have some knowledge and skills in the conduct of the teaching profession, a group of researchers care more that they have personal characteristics such as curiosity, talent, creativity and love (Yüksel, 2001). MEB (2017) covered the competencies that today's teachers should have under three headings as "professional knowledge", "professional skills", "attitudes and values". professional knowledge; It covers the field knowledge, field education knowledge and legislation knowledge that teachers should have. professional skill; It includes planning the education-teaching process, arranging learning environments, managing the learning-teaching process and measurement-evaluation activities. Attitudes and values are national, spiritual and universal values that a teacher should have (MEB, 2017). In order to enable teachers to use technology actively in the education process in the 21st century, the International Education Standards Association (ISTE) updated the teacher standards (ISTE, 2008), which they named ISTE-T under five headings, and addressed them under seven headings as educator standards (ISTE, 2020). These standards; learner, leader, citizen, collaborator, designer, facilitator/enricher and analyst. Lemov (2010) examined the competencies required for effective teaching in seven groups and emphasized 49 teaching techniques by addressing each group under different subheadings. These groups are; creating high academic expectations, planning for academic success, structuring and presenting the course, ensuring student participation in the course, creating a strong classroom culture, creating and maintaining high behavioral expectations, structuring character and honesty. When these groupings stated by Lemov are examined, it will be correct to express that qualified teachers are individuals who know themselves, question, research, update themselves, plan the teaching process, create safe learning environments, ensure active participation of students in the lesson, and encourage them by taking into account individual differences in the learning-teacher process. Melvin (2011) states that a good teacher should have the skills to organize his own personal space and materials, to create different environments for change, to use a reflective teaching model, to be a model as a leader, to make different practices in extracurricular times, to cooperate with parents and to create a culture of citizenship.

After the international and national literature reviews, 21st century skills determined by different institutions, organizations and researchers were examined and 21st century skills that teachers who are both learners and teachers of the 21st century should have; cognitive skills, personal-social skills and professional skills. cognitive skills; thinking skills (analytical thinking, critical thinking, creative thinking, reflective thinking), literacy skills (information literacy, media literacy, information and communication technologies literacy), problem

solving and decision making and learning to learn sub-titles. Personal-social skills; communication and cooperation, entrepreneurship and risk taking, social and cultural awareness, leadership and taking responsibility. Professional skills are explained under three sub-headings: effective classroom management, organizing learning environments and developing materials, and monitoring and evaluating student development.

1.1. Problem statement

The rapid change and development experienced throughout the world deeply affects social life. One of the areas most affected by these changes is education systems. It is of great importance that educational institutions and teachers, which aim to train citizens of the 21st century, develop themselves in this direction. If Turkey is aimed to be a country that can adapt to these changes today and in the future, strong, having a say in the new world order, actively producing and using the latest technologies, and having effective citizens, it should be able to teach the new generations, who are 21st century learners, the competencies required by the age, It should be ensured that they are active individuals in the world of the 21st century by creating new professions. Teachers, who have the most responsibility in this process, are expected to follow all the developments in the world closely and lead the society in raising the next generations as individuals who are equipped with the skills required by the age and can adapt to the society they live in.

The research is of great importance in terms of determining at what level the classroom teachers, who are the most important stakeholders of educational institutions, who prepare students for the future and who are both learners and teachers of the 21st century, have the competencies required by the age and whether their use of these skills differs according to various independent variables. In this context, the aim of the research is to determine the level of use of 21st century teacher skills by classroom teachers and to reveal whether the level of use of these skills differs according to gender, graduation status and professional preferences. Therefore the main research question was formulated as “What level are classroom teachers' 21st century teaching skills?”. Based on the main research question, the sub-research questions can be stated as in the following:

1. Does the classroom teachers' 21st century teaching skills; show a significant difference according to;
   a. Their gender,
   b. Graduation status,
   c. Professional preferences?

2.Method

2.1. Research design

In this study, a cross-sectional survey model from quantitative research was used. Survey research is a research model that aims to describe a past or present situation as it is (Karasar, 2016). In the cross-sectional survey model, the results are tried to be determined by measurements to be made on different groups, which are assumed to represent various stages. Therefore, the results that are obtained are interpreted as if they were taken from the same group (Karasar, 2005).

2.2. Participnts

The research focuses on the classroom teachers working in Malatya Province Center (Battalgazi-Yeşilyurt) districts in the 2020-2021 academic year. According to the data of

Malatya Provincial Directorate of National Education, there are 1994 classroom teachers working in the Battalgazi and Yeşilyurt districts of Malatya in the 2020-2021 school year. Along with the calculations regarding the number of samples, in the study 269 classroom teachers were selected via simple random sampling method in order to administer the scale.

2.3. Data collection tool

In the research, the "21. Century Learner and Teacher Skills Use Scale" developed by Göksun (2021) was used to collect the data by applying it to the classroom teachers working in the central districts of Malatya as of the 2020-2021 academic year. Before the scale was administered, the necessary ethics committee permission was obtained from the Scientific Research and Publication Ethics Committee of İnönü University.

2.4. Analysis of data

The data obtained in the research were analyzed using the SPSS (The Statistical Packet for Social Sciences) 22.0 package program. Kolmogrow-Smirnov test was applied to determine whether the distribution was normal or not. Since the Kolmogrow-Smirnov value is ($p < .05$), the data set does not show normal distribution. While analyzing the data obtained in the research, descriptive statistical calculations were made first to determine the level of use of 21st century learner and teacher skills by classroom teachers. Since the data set did not show a normal distribution, the Mann-Whitney U Test was used for variables with two categories, and the Kruskal-Wallis H Test for variables with three or more categories.

3. Findings

The findings obtained in this section were interpreted by showing them in tables according to the independent variables.

3.1. 21st Century Teaching Skills of Classroom Teachers

Descriptive statistics on 21st century teacher skills of classroom teachers are given in Table 1 below.

Table 1. *Descriptive Statistics of 21st Century Teacher Skills*

Skill Area	n	$\underline{X}$	Standard Deviation
Teaching	269	4.19	.481
Managerial	269	4.28	.542
Technopedogogical	269	3.89	.477
Approving	269	4.74	.406
Flexible Teaching	269	3.95	.916
Generative	269	4.19	.677

In Table 1, the average of 21st century teacher skills of classroom teachers is 4.19; The use of sub-dimensions of teacher skills is listed as 4.74 in approving skills, 4.28 in managerial skills, 4.19 in generative skills, 3.95 in flexible teaching skills and 3.89 in technopedagogical skills.

3.2. 21st Century Teaching Skills of Classroom Teachers by Gender

The results of the Mann-Whitney U Test of the sub-dimensions of classroom teachers' 21st century teacher skills by gender are given in Table 2.

Table 2. *Mann-Whitney U Test Results of 21st Century Teacher Skills by Gender*

Skill Area	Gender	n	Rank Average	Row Sum	U	P
Managerial	Female	119	**148.12**	17626	7363	**.013**
	Male	150	**124.59**	18688		
Technopedogogical	Female	119	138.46	16477	8513	.514
	Male	150	132.25	19838		
Approving	Female	119	**150.42**	17899	7090	**.001**
	Male	150	**122.77**	18415		
Flexible Teaching	Female	119	137.39	16349	8640	.643
	Male	150	133.10	19965		
Generative	Female	119	144.40	17183	7806	.068
	Male	150	127.54	19131		

In Table 2, it has been found out that there is no significant gender difference in the areas of technopedagogical, generative and flexible teaching skills of classroom teachers in the 21st century. Findings show that classroom teachers' use of technopedagogical, generative and flexible teaching skills of 21st century teacher skills are at a similar level. There is a significant differentiation in the field of managerial skills ($p < .05$), and when the mean rank is taken into account, it is seen that the differentiation is in favor of women. There was a significant difference in approving skills ($p < .05$), and when the mean rank was taken into account, it was understood that the differentiation was in favor of women.

3.3. 21st Century Teacher Skill Levels According to Graduation Status of Classroom Teachers

The Kruskal-Wallis H Test results according to the graduation degrees of the sub-dimensions of the 21st century teacher skills of the classroom teachers are given in Table 3.

Table 3. *Kruskal-Wallis H Test Results of 21st Century Teacher Skills According to Graduation Degrees*

Skill Area	Graduation Status	n	Row Sum	Ss	χ^2	p	Significant Difference
Managerial	(A)Associate Degree	15	96.00	.542	4.91	.086	-
	(B)Undergraduate	214	135.31				
	(C)Graduate	40	147.98				
Techno-pedogogical	(A)Associate	15	115.77	.477	1.09	.578	-
	(B)Undergraduate	214	135.42				
	(C)Graduate	40	139.95				
Approving	(A)Associate	15	106.40	.406	2.82	.243	-
	(B)Undergraduate	214	136.12				
	(C)Graduate	40	139.74				
Flexible Teaching	(A)Associate	15	115.23	.916	6.32	**.042**	**C- B**
	(B)Undergraduate	214	131.49				
	(C)Graduate	40	161.19				
Generative	(A) Associate	15	96.13	.677	6.00	**.049**	**C- A**
	(B)Undergraduate	214	134.58				
	(C)Graduate	40	151.80				

In Table 3, there is no differentiation according to the graduation degrees of the 21st century teacher skills of classroom teachers in the areas of managerial, technopedagogical and approving skills (p> .05). There is a significant difference (p <.05) between undergraduate and graduates in flexible teaching skills. There is a significant difference (p < .05) between associate degree graduates and postgraduate graduates in generative skills, and considering the mean rank, it is seen that this differentiation is in favor of graduate graduates.

3.4. 21st Century Teaching Skills According to Classroom Teachers' Occupational Preferences;

The Kruskal-Wallis H Test results regarding the level of use of the sub-dimensions of 21st century teacher skills by classroom teachers according to their professional preferences are given in Table 4.

Table 4. *Kruskal-Wallis H Test Results According to Vocational Preferences of 21st Century Teacher Skills*

Skill Area	Professional Choice	n	Row Sum	Ss	χ^2	p	Significant Difference
Managerial	(A)Unwilling	50	121.60	.542	17.91	**.000**	**C – A** **C – B**
	(B)Partially willing	151	123.95				
	(C)Willing	68	169.39				
Technopedogogical	(A)Unwilling	50	123.54	.477	8.99	**.011**	**C – A** **C – B**
	(B)Partially willing	151	127.90				
	(C)Willing	68	159.19				
Approving	(A)Unwilling	50	129.55	.406	8.97	**.011**	**C – B**
	(B)Partially willing	151	127.08				
	(C)Willing	68	156.60				
Teaching	(A)Unwilling	50	140.33	.916	12.42	**.002**	**C – B**
	(B)Partially willing	151	121.89				
	(C)Willing	68	160.20				
Generative	(A)Unwilling	50	118.09	.677	7.48	**.024**	**C – A**
	(B)Partially willing	151	131.72				
	(C)Willing	68	154.72				

In Table 4, there is a significant differentiation according to occupational preferences in all dimensions of 21st century teacher skills (p <.05). In the managerial skills sub-dimension, there is a significant difference between those who are unwilling to choose the teaching profession again and those who are willing choose the profession again, and between those who are partially willing to choose the profession again and those who are willing; Considering the mean rank, it is seen that the differentiation is definitely in favor of those

who want it. . In terms of technopedagogical skills, there is a significant difference between those who are unwilling to choose the teaching profession again and those who are willing choose the profession again, and between those who are partially willing to choose the profession again and those who are willing, and it is seen that the differentiation according to the mean rank is definitely in favor of those who are willing. In approving skills, there is a significant difference between those who are partially willing to the teaching profession and those who definitely want it, and it is seen that the differentiation is definitely in favor of those who want it when the average rank is taken into account. It is seen that the differentiation between those who partially choose the teaching profession and those who are willing to choose the teaching profession in flexible teaching skills is definitely in favor of those who want it. It is seen that the differentiation between those who are unwilling to choose the teaching profession in generative skills and those who are willing to choose it is in favor of those who definitely do.

4.Conclusion, Discussion and Recommendations

In this study, classroom teachers' 21st century teacher skill levels were measured according to gender, graduation status and professional preferences and it was seen that they had 21st century teacher skills at a sufficient level. The results of the research are similar to the studies conducted in the national area (Gömleksiz, Sinan, & Doğan, 2019; Noise, Aslan, & Alcı, 2019; Göksün, 2016; Kıyasoğlu, 2019; Şahin, 2010). However, when the studies conducted in the international arena are examined, it is seen that teachers need support regarding 21st century skills and transferring these skills to the classroom environment. They especially have problems in integrating technology into education and they demand that vocational training should be increased in these subjects (Bernhardt, 2015; Brun & Hinostroza, 2014). ; Clark, 2008; O'Neal, Gibson, & Cotten, 2017; Valli, Perkkilä, & Valli, 2014; Williams, Gannon, & Sawyer, 2013). The fact that the results of the research differ with the studies conducted in the international arena may be due to the limitations of the scale, as well as the teachers' perceptions of competence and the difference in research methods.

It is seen that the highest level of 21st century teacher skills of classroom teachers belongs to approving. This situation is similar to the results of the related research (Miller & Pedro, 2006; Göksün, 2016; Noise, Aslan, & Alcı, 2019; Kıyasoğlu, 2019; Kozikoğlu & Özcanlı, 2020). The highest level of affirmation indicates that democratic, supportive, constructivist learning environments in which individual differences are taken into account are preferred rather than rigid and authoritarian in the learning-teaching process (Aslan, 2011). Miller and Pedro (2006) state that creating classroom environments in which students are approved and encouraged for their correct behavior and feel emotionally happy and safe contributes positively to both cognitive and social development of students. According to Cüceloğlu (2018), the driving force in learning environments dominated by a "control-oriented fear culture" is fear, and it is at the forefront that the student fears the teacher and exhibits the desired behavior because he or she is afraid. The teacher gives importance to external motivations by taking into account the students' exam success and the degree of competition. However, in learning environments dominated by a "development-oriented culture of values", the power of the teacher is love, and love as an internal discipline enables the student to internalize the values and choose the behavior that he/she should learn on his/her own responsibility. In learning environments where an approving attitude is dominant on the basis of love instead of fear, individuals show better progress in spiritual development, self-actualization, self-confidence, productivity and being an effective citizen. A "development-oriented culture of values" will be dominant in the learning environments of classroom

teachers who use approving skills that include behaviors that support and approve students, not criticizing and judging them, and students who grow up in these learning environments will be conscious individuals with high self-confidence and fulfilling their responsibilities. The fact that the teaching profession is a sacred profession in which values such as love, respect, self-sacrifice and dedication come to the fore (Ekinci, 2017) increases the importance of individuals who choose the teaching profession to do this profession willingly and fondly. The high level of approving skills of those who choose the teaching profession voluntarily is a result of having the effective competencies that are required by the profession. Bulut (2004) expresses that female teachers are more approving in creating effective and constructive relationships in the classroom. This explains why female teachers have higher approving skills than male teachers. It can be said that primary school teachers follow current developments concerning their professional duties and responsibilities in terms of seeing themselves at a good level in the field of administrative skills. They are planned and programmed for the course process, they keep records about the development processes by closely following the student development. In short, they have effective classroom management skills.

Evertson and Weinstein (2006) state that classroom management is a process that aims the social and moral development of students, as well as creating and maintaining an environment in which students can provide meaningful academic learning. Teachers with effective classroom management skills can be defined as tolerant, developed leadership skills, creating democratic learning environments by taking individual differences into account (Aslan, 2011), giving importance to students' ideas and using materials that improve student skills (Sabancı, 2014). Teachers with high managerial skills will be able to minimize individual differences among students and ensure their active participation in the learning process. Light (2013); asserts that those who are successful at excelling in their work, school, and friend circles progress more easily in their profession and are more successful. The core reason for this is based on the ability to establish healthy and strong communication. This situation can be interpreted as the teachers who willingly practice their profession have strong communication and leadership skills, and therefore they are more successful in managerial skills. The fact that the majority of primary school teachers in many parts of the world are women, and that teaching is the oldest and first public profession for women in Turkey (Çekten, 2004). Female teachers see themselves better equipped than male teachers in the field of teaching profession (Lin, Tsai, Chai, & Le, 2012) may explain the higher level of use of managerial skills by female teachers compared to male teachers. Seeing oneself at a good level in generative skills can show that they support the active learning of their students by preparing original materials and activities in the learning-teaching process. Teachers' production of original materials in the learning-teaching process enriches the learning process, facilitates the understanding of information by concretizing, increases motivation and provides access to desired behaviors by doing and experiencing (Halis 2002). For this reason, teachers' production and use of correct and effective materials in the education-teaching process will ensure that teaching is more effective, students will achieve the intended behaviors more quickly and permanent learning (Yelken, 2015). The fact that they see themselves above the intermediate level in the field of flexible teaching skills can show that they plan and implement out-of-class learning activities in the education-teaching process. Flexible teaching allows one to transform the theoretical knowledge learned in the classroom environment into practice with out-of-class learning activities and to learn by doing-living (Şimşek, 2011). Out-of-class learning environments reduce learning problems caused by individual differences and contribute to the progress of individuals according to their own learning speed (Melber & Abraham, 1999). It is also said that organizing learning activities outside the classroom makes teaching interesting and improves students' research,

inquiry and discovery skills. (Kubat, 2018). Nevertheless, the failure to achieve the targeted success in the PISA exams (MEB, 2020), which aim to determine the level of use of the knowledge and skills acquired by students at school in their daily lives in Turkey, can be evaluated as an indicator that teachers do not use their flexible teaching skills that enable learning by doing and experiencing.

Teachers will walk away from the idea of being a teacher if they have chosen their profession not because of interest or love, but simply because of unemployment concerns or living conditions; that's why, instead of being effective and productive while doing his job, he will focus on the expiry of the working time in any way at school or in the classroom (Bozdoğan, 2004). The fact that those who do the teaching profession voluntarily have high managerial skills, which show that they are more effective and generative in the learning-teaching process, is the result of making choices according to their professional interests and abilities, not because of professional anxiety or living conditions. Flexible teaching and generative skills progress are in line with teachers' personal and professional development. Teachers who constantly update themselves and develop professionally will be more generative and flexible individuals. Kozikoğlu and Özcanlı (2020) stated in their study that teachers who work in primary schools and are willing to take postgraduate education have a higher level of 21st century teaching skills. Brun and Hinostroza (2014) stated that teachers need professional development training and that these training will affect the development of skills that teachers will use in their professional lives. These studies explain that the level of flexible teaching and managerial skills used by graduates is higher than that of associate and undergraduate graduates.

The fact that primary school teachers perceive themselves as above the intermediate level in the field of technopedagogical skills shows that they can actively use new technologies in the learning-teaching process. This result is similar to the studies of Adıgüzel and Yüksel (2012) and Şad, Açıkgül and Delican (2015). It has gained great importance to train qualified teachers who have the ability to use the developing technology and innovative technologies in the learning environment and use them effectively in the teaching process (Kaya, 2019). With the increased use of smartphones, tablets and computers as a result of developments in Information and Communication Technologies (ICT), and emerging online communication forums, social media sites, blogs; (Atilla & Ün, 2018) facilitates the acquisition, storage and dissemination of information (Atılgan, 2006). The most crucial step taken towards the active use of ICT in education in Turkey, increasing the ICT literacy competencies of learners and ensuring the digital transformation of educational institutions is the "Movement to Increase Opportunities and Improve Technology" (FATIH) project.

This project initiated by the Ministry of National Education to realize e-transformation in education has shown how important it is for 21st century learners and teachers to have ICT literacy skills (Günay & Şişman, 2019). This transformation in educational technologies requires teachers to have a command of the technological pedagogical subject area in the learning-teaching process (Niess, 2005). Three basic components of technopedagogical content knowledge are; pedagogical knowledge, field knowledge and technological knowledge (Sarıçoban, Tosuncuoğlu, & Kırmızı, 2019). Teachers with technopedagogical content knowledge will closely follow the latest developments in technology and will be able to easily integrate these developments into their learning environments. When the relevant studies in the literature are scrutinized, it can be stated that the technopedagogical content knowledge levels of the teachers are in general insufficient and this skill area is in need of development (Garba, Byabazaire, & Busthami, 2015; Göksün, 2016; Karadeniz & Vatanartıran, 2015). This situation can be explained by the lack of course content in which teachers can learn how to use their technological and pedagogical knowledge practically during their undergraduate education (YÖK, 2007) and the in-service training they have

received during the teaching profession is not of a quality to improve this skill area. Clark's (2008) study supports that one of the most crucial problems in developing teachers' technological skills is the insufficient professional development training that will enable them to use technological tools and equipment effectively.

The fact that there is differentiation in all dimensions of 21st century teacher skills according to the variable of professional choice shows how important the professional choice is in the effective implementation of the teaching profession. The selection of the candidatesvfor the teaching profession in Turkey is not in line with their interests and abilities, but mainly according to the scores they have obtained in the entrance exam to higher education institutions. That exam aims to measure their academic success, and may adversely affect the successful execution of the teaching profession, which requires the values of love, respect, sacrifice and dedication. Only 25% of the teachers who are on duty according to their professional preference do it voluntarily, about 20% of them state that they would never choose the profession of teaching if they have the chance to choose a profession again, and the remaining 55% consists of those who are partially willing to the profession. This situation actually shows how insufficient the number of individuals who do the teaching profession lovingly and willingly. The fact that the number of individuals who do the teaching profession voluntarily is so low can be explained by the fact that teachers have problems in terms of working conditions, wages, promotion in a short time after starting their duties and develop increasing negative attitudes towards their profession as a result of their inability to ameliorate themselves (Akçamete, Kaner, & Sucuoğlu, 2001).

In order for classroom teachers to improve their generative skills, school administrations can be asked to prepare supportive materials and to use these materials in the learning-teaching processes actively. In cooperation with the school management, the group teachers can make a list of the materials they will need at the beginning of the year in line with the learning areas and achievements, and prepare these materials in line with the task sharing and create a material class. Parent and student support can also be sought during these activities.

The number of teachers participating in these trainings can be increased by making the postgraduate trainings in which teachers provide personal and professional development more attractive. E.g; Personal and professional development can be encouraged by supporting postgraduate teachers in matters such as economic improvement, title or service score.

Considering the effect of the vocational preference variable on the 21st century teacher skills, it should be ensured that individuals with universal values, high professional interest and love for the profession, as well as academic success, should be selected for the teaching profession. It can be seen that individuals who choose the teaching profession willingly, have a high sense of belonging and adapt to their profession, are more successful in their profession and have a higher level of use of 21st century skills. In this context, the country's teacher selection and placement policies can be reviewed and it can be made sure that teaching is not an alternative choice but the focal one.

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