Investigation of Classroom Teachers' Views towards Innovative Pedagogical Practices

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The 21st century requires different and innovative ways of teaching compared to the previous century. As a result, a new and current educational approach called innovative pedagogy comes out as an issue. This study aims to investigate classroom teachers' innovative pedagogical practices with different variables, as well as the contributing or deteriorating factors that affect the relevant processes. The study was designed based on the descriptive survey method in which quantitative and qualitative data were used. The Innovative Pedagogical Practices Scale for Teachers was applied to 961 classroom teachers and the obtained data were analysed with descriptive statistics and parametric tests. Then an interview form was prepared and 30 classroom teachers were asked to fill the form. The obtained data analysed with the descriptive analysis method. The findings showed that classroom teachers frequently use innovative pedagogical practices in their classrooms to fulfil the requirement of the learner-centred educational approach. Besides, teachers' participation in professional courses, the number of scientific events attended and the type of books teachers read were determined to be contributing variables for teachers to implement innovative pedagogical practices. However, the teachers faced such problems as the intensity of curriculum, equipment, and technical deficiencies and inadequate readiness level of students.

Introduction

Every age in the world has led to the formation of its own philosophy. Each philosophy takes shape in line with the social, political, scientific, technological, and economic developments of that very age. This philosophy that dominating the age determines the human profile to be raised through the education systems, which in the end lead to societies' all over the world experiencing changes and developments for thousands of years. However, the world has been witnessing many more changes than it has ever experienced since the last century. The innovations and advances that human beings have made in science and technology, especially in the last century, have led to changes and transformations in the

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lifestyles, socio-cultural structures, economic systems, educational structures, and many other activities of societies (Özdemir, 2011).

Today, many countries, especially members of the Organization for Economic Cooperation and Development (OECD, 2018), scrabble to determine the pedagogy that can keep up with the innovations and changes brought by the new age. In line with this, large-scale studies are conducted to determine the characteristics of students, teacher candidates, preservice teachers, and teachers who will respond to the needs of the age and equip the learners with these changes through educational institutions (e.g., International Society for Technology and Education (ISTE, 2017), American Association of Colleges for Teacher Education (AACTE, 2017), Partnership for 21st Skills (P21, 2010), Ministry of National Education 21st century learners' profile, 2011). These large-scale studies show that the skills needed to be acquired by students in the 21st-century share similarities. For example, ISTE (2017) determined certain standards for students to be successful in the 21st-century world and classified them under the following concepts: (1) creativity and innovation, (2) communication and collaboration, (3) research and information flow, (4) critical thinking, problem-solving and decision making, (5) digital citizenship and (6) technology use and related concepts (Günüç, Odabaşı & Kuzu, 2013: 438). Moreover, a project funded and carried out by the United States, emphasizes students' acquiring 4C's of education: (1) critical thinking and problem solving, (2) communication, (3) collaboration and (4) creativity and innovation skills along with such themes as global awareness, financial, economic and entrepreneurial literacy, society, health and environmental literacy, which should be emphasized as interdisciplinary issues (P21, 2010). Such efforts to equip learners with the aforementioned skills in education arouse the concept of innovative pedagogy.

Innovative pedagogy points to the scientific study of an innovative educator and innovative learning-teaching processes. The main problem of innovative pedagogy is to determine what the educational, psychological, and institutional factors and situations that have great impact on the physical abilities, character, and cognitive skills of the individual are. As science and practice; innovative pedagogy aims to educate information society citizens in a manner that they are creative, can afford the change, manage, analyse, and work with information. In line with this, schools and teachers around the world are implementing educational reforms to make their teaching practices and education systems more effective (URL-1). Although it is not easy to give an absolute definition, innovative pedagogy emphasizes the different uses of all technology possible in the classroom within the learning and teaching processes and approaches (Salmon, 2005). It is also accepted as an educational approach that takes into account the expectations of all the stakeholders of education especially teachers and learners and the context in which it emerged (Moloney & Xu, 2016).

Innovative pedagogy requires an innovative learning and teaching process. This process requires the development and implementation of activities such as exploratory, research-oriented, educational games and models in the educational process (Stukalenko, Zhakhina, Kukubaeva, Smagulova, & Kazhibaeva, 2016). The teaching process designed with an innovative approach emphasizes knowing and implementing methods and strategies that facilitate and accelerate the learning of a concept or subject (Sengupta & Tyagi, 2016).

Within the scope of innovative pedagogy, the integration of technology with pedagogy, that is, the effective use of technology in the classroom is an important criterion. In this new pedagogy, researching, collecting information, communicating online, presenting and editing the obtained information is especially managed with the help of existing technology (Naifeld

& Simon, 2017). Because in the innovative education approach of the 21st century, knowledge is considered as a phenomenon that is structured through the digital and non-digital form or socially structured environments, rather than a phenomenon conveyed by the field expert (Ladyshewksy & Gardern, 2008). Thus, the use of technology is integrated into educational environments to contribute to learners' learning skills and knowledge structuring processes (Russell & Schneiderheinze, 2005). Bringing new tools and technologies to the classroom provide opportunities for students for innovation (Goatley & Johnston, 2013). However, these technologies are not inserted in an empty environment indeed they are used together with existing tools and concepts in the classroom. Thus, teachers face the complex struggle of combining new ideas with deep-rooted pedagogical beliefs and practices while trying to implement new technology in a learning environment (Russell & Schneiderheinze, 2005). Thereupon teachers are keystones in educational institutions for adopting an innovative approach and have the duty of behaving innovatively to help students gain the knowledge and skills required by the age as well as develop academic knowledge and skills.

Students can only acquire the aforementioned skills (i.e., innovativeness, creativity, problem-solving, and alike) with the guidance of teachers who design appropriate environmental conditions and stimulants for innovations (Kozma & Anderson, 2002). Otherwise, it would be a utopian idea to expect students to acquire these innovative skills and to be capable of competing with 21st-century societies through traditional learning practices. In light of these, there has been a remarkable endeavor in Turkey to insert the innovative skills to different stages and levels of educational institutions. The first attempt was the revision of teaching programs implemented in primary schools in a way that they can include 21st-century life skills by Ministry of National Educational [MoNE] (2018), one of the central body responsible for the educational decisions in Turkey. Then another institution responsible for the training and teaching programs of teacher candidates called as Council of Higher Education (CoHE, 2018) updated the teacher training programs within the scope of the developments in the related field, scientific studies, and 21st-century skills and competencies. The related literature also shows a remarkable emphasis on this issue since the 2000s and many scientific studies have been conducted on this since then (Abbak, 2018; Akdeniz & Kadı, 2016; Kaya, 2017; Kert & Tekdal, 2012; Kılıç, 2015; Kocasaraç, 2018; Köroğlu, 2014; Özbek, 2014; Özgür, 2013; Yılmaz, 2018; Yorulmaz, Çokçalışkan & Önal, 2017). Frankly, in these studies the innovativeness levels of teachers and preservice teachers are frequently tested in terms of different variables, or the relationships between innovativeness and different skills are tested in these studies. Although these studies provide a great deal of information about the individual innovativeness levels of teachers, they fail to provide sufficient data on how this innovativeness level of teachers affects their teaching process in the educational context. Thus, this study differs from other studies in the literature as it determines how often teachers can apply innovative pedagogical practices that express the reflection of their innovativeness in the teaching process and test the variables that affect these practices.

With this in mind, this study aims to investigate classroom teachers' innovative pedagogical practices with different variables as well as the contributing or deteriorating factors that affect the relevant processes. Within the framework of this general purpose, this study investigates the following research questions:

(1) What are the views of classroom teachers working in primary schools on their level of innovative pedagogical practices?

(2) How do the views of classroom teachers working in primary schools on innovative pedagogical practices differ in terms of different variables (the gender, the number of the students in classroom, the education level, the number of scientific events attended, the participation to professional courses, the type of book they prefer to read)?

(3) Why do classroom teachers working in primary schools need to use innovative pedagogical practices in their classrooms?

(4) What kind of problems do the classroom teachers working in primary schools come across when applying innovative pedagogical practices?

Method

Research Design

This study was designed on the basis of descriptive survey method in which quantitative and qualitative data were used. Descriptive survey method is a scientific research model especially used to investigate the conditions, apractices, processes, beliefs, relationships, and tendencies of an existing phenomenon (Salaria, 2012). In this direction this study was designed based on the descriptive survey model, to examine the classroom teachers' views on their innovative pedagogical practices without any intervention.

Population and Sample

The population of the study consists of 2805 classroom teachers working in primary schools in the central districts of Diyarbakir in Turkey in the 2018-2019 academic year. In the study, the cluster sampling method was used to collect quantitative data faster and easier. Cluster sampling is a type of random sampling method in which the sampling elements are included in the sample as a group instead of being selected individually since the elements to be selected for sampling have similar characteristics (Özen & Gül, 2007: 406). Therefore, in this study, schools in four central districts of Diyarbakır were selected randomly and 961 classroom teachers working in these schools were included in the study. The descriptive properties of the sample included in the study are shown in Table 1.

Table 1. The descriptive properties of the sample included in the study

Gender	Female	Male	Total
N	475	486	961
%	%49.4	%50.6	%100
Education Level	**Bachelor's degree**	**Postgraduate degrees**	**Total**
N	907	54	961
%	%94.4	%5.6	%100

The qualitative data were collected through interviews with 30 classroom teachers working in primary schools in the central districts of Diyarbakır in the 2018-2019 academic year. The participants were selected with the help of maximum likelihood sampling and convenient sampling methods. The maximum likelihood sampling method aims to ensure the greatest variety of the participants in terms of certain variables, while the convenient sampling method aims to include the participants who can provide fast and practical data on the research problem (Yıldırım & Şimşek, 2011). In this study, the maximum diversity sampling method was used in the selection of the schools, and a total of 6 primary schools (3 state schools 1 private school in the central, and 2 state schools in the districts of Diyarbakir) were selected. In the selection of the participant teachers, volunteers and available classroom teachers were

selected in light of the suggestions from the school administrators and the data collection process was ended when the data saturation was ensured. The descriptive properties of the participants in the study are shown in Table 2.

Table 2. The descriptive properties of the participants included in the study

Gender	Female	Male			Total
N	15	15			30

Education Level	Bachelor's degree	Postgraduate degrees			Total
N	27	3			30

School type	Private school	State school			Total
N	3	27			30

Professional seniority *	1-5	6-10	11-15	16-20	21 and over	Total
N	6	6	11	5	2	30

*years

Table 2 shows that the participants were 30 classroom teachers, 15 of whom were male and 15 of whom were female, working in primary schools in the central and districts of Diyarbakir. The participants show a variety not only in terms of gender, but also regarding the school type, and professional seniority.

Instruments

The data of the study were collected with "Innovative Pedagogical Practices Scale for Teachers" and semi-structured "Innovative Pedagogy Interview Form".

Innovative Pedagogical Practices Scale for Teachers: This scale was developed to measure teachers' innovative pedagogical practices of teachers by Süer and Oral (2021). The scale is a five-point Likert type consisting of 46 items whose factor loads are mostly between 0.41 and 0.72, gathered under a single factor explaining 36.24% of the total variance. The structure of the scale was confirmed with the Confirmatory factor analysis indicating perfect or good agreement values with the following values: Standardized RMR compliance index was .08, CFI is .96, NFI is .93, NNFI is .95, and chisquare/df was 2.37. The Cronbach Alpha reliability coefficients were .95. In this study the Cronbach Alpha reliability coefficients were calculated as 96.3.

Innovative Pedagogy Interview Form: The qualitative data required for the research were collected using the innovative pedagogy interview form developed by the researchers. After having reviewed the literature and the quantitative research findings, the researchers designed a draft form consisting of four personal information and two open-ended questions in line with the research questions. The draft form was sent to five experts (two in the field of educational science, two in primary school education field, and a classroom teacher), as a result of the feedback received from the experts, the form was revised and used. Innovative Pedagogy Interview Form consists of the following questions:

- Personal information (Gender, Education Level, School Type, Professional seniority).
- Do you use innovative practices (such as experimenting or developing different technologies, methods and materials while teaching a subject) in your classroom?

Please write down your views by specifying why you need to use innovative practices in educational contexts.

- What do you think are the most important problems you encounter while implementing innovative pedagogical practices in your classroom? Please write by specifying your reasons.

Data Collection Process

In this study, firstly quantitative and then qualitative data were collected. The quantitative data required for the research were collected from primary schools in the central districts of Diyarbakir in the 2018-2019 academic year. During the data collection process, the Innovative Pedagogy Scale for Teachers was applied to classroom teachers and 1002 questionnaires were collected. 41 of the collected forms were excluded because they were filled incompletely and incorrectly (some participants responded to more than one options in so many variables in the scale). Thus, a total of 961 forms were recorded to the computer software (SPSS) for analysis.

The qualitative data were collected by conducting face-to-face semi-structured interviews with teachers, after first contacting the schools and making appointments. During the data collection process, the participants and the school principals were asked to fill the forms in through their handwriting instead of resorting to audio recordings in this regard. Each participant conveyed his/her opinions and thoughts in the relevant form through their handwriting and a total of 30 forms were obtained and recorded onto computer files.

Data Analysis

The quantitative data of the study were analyzed by using descriptive statistical techniques, arithmetic mean, and standard deviation values. To interpret the mean scores obtained with the Innovative Pedagogy Scale for Teachers, the score ranges and levels specified in Table 3 were taken into consideration.

Table 3. Score ranges and levels used to interpret mean values

Numeric Weight	Levels	Score Ranges
5	Always	4.21-5.00
4	Often	3.41-4.20
3	Sometimes	2.61-3.40
2	Rarely	1.81-2.60
1	Never	1.00-1.80

The data were first tested in terms of normality to select appropriate analysis techniques. Pallant (2016) suggested checking the graphs of normality especially in cases where the sample size is more than 200. In line with this, Histogram and Q-Q graphics, which are the normal distribution graphics of the scale scores, were examined and the data set showed a normal distribution as shown in Figure 1.
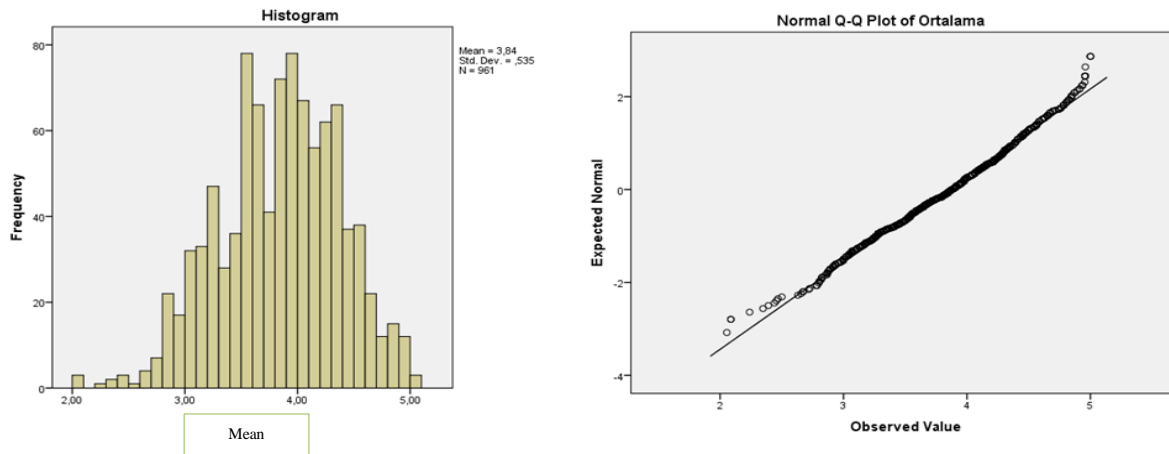
Figure 1. Histogram and Q-Q graphics

Then, the mean scores of each independent variable were tested in terms of homogeneity. As a result of the Levene homogeneity test, the mean scores of 4 independent variables were homogeneous, while the mean scores of 2 independent variables were not homogeneous which indicates a moderate violation of homogeneity. Tabachnick and Fidell, (2013) suggested the use of stricter significance levels in case of moderate violation of homogeneity. For this reason, four independent variables of the research were tested with .05 significance level, while the other two ones were tested with .01 significance level. In the analysis of independent variables, independent samples t-test, and one-way analysis of variance (one-way ANOVA) was used. As a posthoc test the Scheffé method was preferred because this method computes all possible contrast between means and it is more sensitive for complex comparisons (Brown, 2005), thus it is recommended when the number of groups is high and the number of observations in the groups are unequal (Scheffe, 1959). Then, the eta-square value was calculated for the variables with a significant difference.

The qualitative data obtained in this study were analysed with the descriptive method which refers to the process of analysing and interpreting research data by taking into account the theme and dimensions of research questions (Yıldırım & Şimşek, 2011). In addition, the inductive analysis approach, which expresses the process of discovering patterns, themes, and categories in data (Patton, 2014), was adopted in this study.

In qualitative research, the concepts of credibility, reliability, and consistency, transferability are preferred instead of the concepts of validity and reliability (Guba & Lincoln, 1982). In line with this, the interviews with the participants were carried out in the schools, and the data collection process was continued until sufficient data were obtained and when the data saturation was reached. In order to increase the consistency of the research, the process from the development of the interview form to the discussion of qualitative findings was expertized in detail. The validity of the quantitative analysis was ensured with the confirmation by the related literature, expert opinions, and participant feedback. "Validity" in qualitative studies refers to the degree of data reflecting the truth and the triangulation method was used to ensure validity in the analysis (Silverman, 2000). In this study, the analyzer triangulation method, one of the triangulation types, was used and analyses were expertized by three experts (two experts in educational science and one in primary school education). The themes and teachers' opinions were determined to be consistent and supported by the related literature.

Findings

In this part of the study, the opinions of classroom teachers working in primary schools on innovative pedagogical practices were examined in terms of certain variables, and the findings were presented below.

Classroom teachers' views towards innovative pedagogical practices.

In order to determine the classroom teachers' views towards innovative pedagogical practices, innovative pedagogy scale for teachers was applied and the average and standard deviation values of the findings were shown in Table 4.

Table 4. The mean and standard deviation scores of classroom teachers regarding innovative pedagogical practices

	$\overline{\text{X}}$	Sd	Level
Classroom teachers' views towards innovative pedagogical practices	3.84	.54	Often

Table 4 showed that the classroom teachers' views towards innovative pedagogical practices are at the level of "often" ($\overline{\text{X}}$=3,84), which means that teachers frequently use innovative pedagogical practices in their classrooms.

Investigation of Classroom Teachers' Views towards Innovative Pedagogical Practices in terms of Certain Variables

- **Gender**

To test classroom teachers' views towards innovative pedagogical practices in terms of gender variable, independent samples t-test was used, and the findings were presented in the table below:

Table 5. The results of independent samples t-test regarding classroom teachers' innovative pedagogical practices in terms of gender variable

Gender	N	$\overline{\text{X}}$	Sd	Df	t	p
Female	475	3.81	.51	959	-1.79	.073
Male	486	3.87	.55			

Table 5 showed that the mean scores of male teachers ($\overline{\text{X}}$=3.87) are higher than the mean scores of female teachers ($\overline{\text{X}}$=3.81). However, the difference observed between the mean scores of male and female teachers regarding innovative pedagogical practices was not statistically significant [$t_{(-1.79)}$ =.073, P>0.05].

- **Number of the students in a classroom**

To test classroom teachers' views towards innovative pedagogical practices in terms of the number of students in the classroom variable, one-way ANOVA test was used, and the findings were presented in Table 6.

Table 6. The results of one way ANOVA test regarding classroom teachers' innovative pedagogical practices in terms of the number of students in the classroom

The number of students	N	$\overline{X}$	Sd		Sum of squares	Df	Mean square	F	p
1-20	108	3.78	.51	Between groups	.978	2	.489		
21-40	706	3.84	.54	Within groups	273.871	958	.286	1.711	.181
41 and over	147	3.91	.51	Total	274.849	960			
Total	961	3.84	.54						

Table 6 showed that as the number of students in the classroom increases, the mean scores of classroom teachers increase. However, the difference observed between the mean scores was not statistically significant [$F_{(1.711)}$= .181, P>0.05].

- **Education Level**

To test classroom teachers' views towards innovative pedagogical practices in terms of the teachers' education level variable, independent samples t-test was used, and the findings were presented in Table 7.

Table 7. The results of t-test regarding classroom teachers' innovative pedagogical practices in terms of teachers' education level variable

Education level	N	$\overline{X}$	Sd	Df	t	p
Bachelor	907	3.84	.54	959	-.124	.902
Postgraduate	54	3.85	.44			

Table 7 showed that the mean scores of teachers having a bachelor's degree (=3.84) is lower than the mean scores of teachers having a postgraduate degree (=3.85). However, the difference observed in the mean scores of innovative pedagogical practices of teachers was not statistically significant [$t_{(-,124)}$=.902, P>0.01].

- **The number of Scientific Events Attended**

To test classroom teachers' views towards innovative pedagogical practices in terms of the number of scientific events attended variable, one way ANOVA test was used, and the findings were presented in Table 8.

Table 8. The results of one way ANOVA test regarding classroom teachers' innovative pedagogical practices in terms of the number of scientific events attended

The number of scientific events attended	N	$\overline{X}$	Sd		Sum of squares	Df	Mean square	F	p	η2	Sig. Difference
A. 1-5	463	3.74	.56								A-C
B. 6-10	187	3.85	.49	Between groups	12.094	4	3.024	11.001	.000	.044	A-D
C. 11-15	152	3.95	.47	Within groups	262.755	956	.275				A-E
D. 16-20	70	3.99	.48	Total	274.849	960					
E. 21 and over	89	4.05	.50								
Total	949	3.84	.54								

Table 8 showed as the number of scientific activities attended by teachers increased, so did their mean scores of innovative pedagogical practices. The difference observed in the mean scores of innovative pedagogical practices of teachers in terms of the number of scientific

activities attended was statistically significant [$F_{(11.001)}$=.000, P<0.01]. However, the effect size of this statistical difference is quite low ($\eta2$ = .044). Thus the variable of teachers' attending scientific events has a low effect on their innovative pedagogical practices. Besides, the results of the Scheffe test showed a significant difference between the teachers who participated up to 5 scientific activities and those who participated in 11-15, 16-20, and 21 or more scientific activities.

- **Participation in Professional Courses**

To test classroom teachers' views towards innovative pedagogical practices in terms of the teachers' participation in professional courses variable, independent samples t-test was used, and the findings were presented in Table 9.

Table 9. The results of t-test regarding classroom teachers' innovative pedagogical practices in terms of teachers participation in professional courses

Participation to courses	N	$\overline{X}$	Sd	Df	t	p	η2
Yes	588	3.89	.54	959	3.925	.000	.016
No	373	3.76	.51				

Table 9 showed that the mean score of teachers participating in professional courses ($\overline{X}$=3.89) was higher than those who do not attend courses related to their profession ($\overline{X}$=3.76). The difference observed in the mean scores of innovative pedagogical practices of teachers in terms of participation in professional courses was statistically significant[$t_{(3.925)}$=.000, P<0.05]. However, the effect size of this statistical difference is quite low ($\eta2$=.016). Based on this finding, the variable of teachers' participation in professional courses has a low effect on their innovative pedagogical practices.

- **The Type of Book the Teachers Prefer to Read**

To test classroom teachers' views towards innovative pedagogical practices in terms of the type of book they prefer to read the variable, one way ANOVA test was used, and the findings were presented in Table 10.

Table 10. The results of one way ANOVA test regarding classroom teachers' innovative pedagogical practices in terms of the type of book they prefer to read.

The type of book	N	$\overline{X}$	Sd		Sum of squares	Df	Mean square	F	p	η2	Sig. Difference
A. Scientific	143	3.93	.56								A-D
B. Professional	89	3.94	.57	Between groups	9.925	4	2.481	8.954	.000	.036	B-D
C. Self-improvement	216	3.92	.50	Within groups	264.924	956	.277				C-D
D. Novel-Short stories	375	3.72	.53	Total	274.849	960					D-E
E. Mixed	138	3.90	.50								
Total	961	3.84	.54								

Table 10 showed that the mean scores of teachers who prefer to read scientific ($\overline{X}$=3.93), professional ($\overline{X}$=3.94), self-improvement ($\overline{X}$=3.92), and different types of books ($\overline{X}$=3.90) were higher than the mean scores of those preferring to read a novel or short stories ($\overline{X}$=3.72). The difference observed in the mean scores of innovative pedagogical practices of teachers in terms of the type of book they prefer to read was statistical significant [$F_{(8.954)}$=.000, P<0.05]. However, the effect size of this statistically difference is quite low ($\eta2$=.036). Therefore, the type of book the teachers prefer to read has a low affect on their innovative pedagogical practices. Besides, the results of the Scheffe test showed a significant difference between the teachers who prefer to read different types of books and those who prefer to read scientific books, professional books, self-improvement books, novel- short stories.

Reasons for Classroom Teachers to Implement Innovative Pedagogy Practices

In the interviews with classroom teachers, the reasons for applying innovative pedagogical practices were investigated. Teachers stated that they mostly try to include innovative pedagogical practices in order to respond to individual differences and needs of students, to attract learners' interest and attention, and to ensure permanent learning in learners, as a requirement of the learner-centred educational approach. Based on these views, the reasons for teachers to include innovative pedagogy practices in the classroom were categorized under three themes.
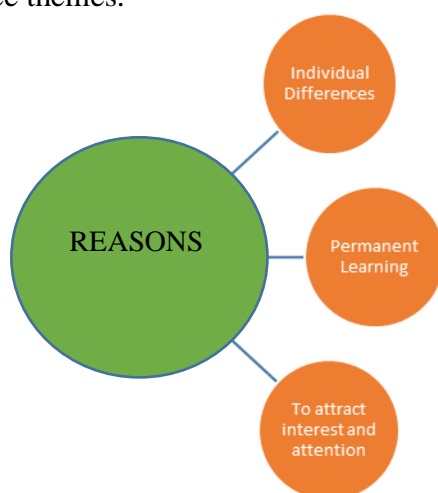
Figure 2. Themes created under the title of reasons for classroom teachers to use innovative pedagogical practices

Figure 2 showed that three main reasons of classroom teachers' using innovative pedagogical practices in their classroom were to design and present teaching activities that would appeal to the individual differences of the students, ensure permanent learning for the students and direct the attention of the students to the teaching subject. Some of the teachers' views on these themes were as follows:

Individual Differences
  I try to use the innovations that arise in education. Because novelties and technology are developing rapidly, learning styles accordingly change rapidly. For this reason, I try to use innovative methods to appeal to age and students' learning styles (T1).
  I apply the innovations that arise in education in my classroom. Most of the children have an interest in visual materials. In addition, they can understand more clearly what they see with their eyes (T24).

First of all, as a primary school teacher, considering the age of our students, it is not possible to adhere to any standard. I use audio and visual materials suitable for students' levels and differences. For example, smart boards, three-dimensional visual models, and figures (T27).

<u>Permanent Learning</u>
Innovative practices really ensure learning to be easy and permanent (T3).
I try to use it as long as the conditions are appropriate. Since children are in a concrete learning period, using materials affects children's learning positively (T12).
I need innovative practices for the concretization of the subject and for the realization of permanent learning by enriching it with visuals (T15).

<u>To attract interest and attention</u>
I am not very creative in developing different materials. But I like to use the different materials I see in the classroom. I think it attracts the attention of the students more (T6).
By using different technologies and methods, we attract more attention of children to the subject. You can concentrate better on the lesson. The lesson becomes more enjoyable (T12).
I especially benefit from the smart board in education. It attracts their attention as it appeals to students visually, and students follow the subjects with curiosity as it supports them with visuals (T25).

Problems Faced by Classroom Teachers While Using Innovative Pedagogical Practices

In the interviews with classroom teachers, the problems of classroom teachers while applying innovative pedagogical practices were investigated. In line with the teachers' responses, it can be stated that they mostly struggle with such problems as the intensity of curriculum content, equipment, and technical infrastructure in schools, and inadequate level of student readiness. Based on these views, the problems of teachers hindering the innovative pedagogical practices in the classroom were categorized under three themes.
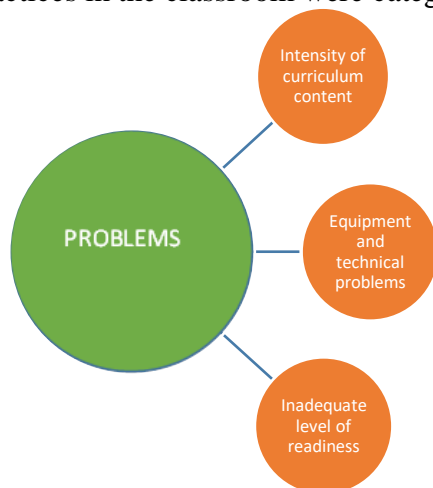
Figure 3. Themes created under the title of the problems that classroom teachers face while applying innovative pedagogy

Figure 3 showed that classroom teachers working in primary schools faced with problems related to the intensity of curriculum, equipment, and technical deficiencies, and student readiness level while designing or implementing innovative teaching activities. Some of the teachers' views on these themes were as follows:

Intensity of Curriculum Content
  Time is very limited. In general, due to time constraints, the duration of the activities makes it difficult for us to try more innovative applications or methods (T7).
  Since there are so many subjects we have to teach, I rush into the curriculum without ensuring internalization. In this context, the active participation of children in the lessons becomes more limited with concrete materials (T8).
  Lengthening of course duration arises as a problem (T14).
  Inflexibility in the curriculum/inflexibility in teaching the curriculum (T17).
  One of the problems we encounter is that the curriculum accepts the education quality of each school as equal (T18).

Equipment and Technical Problems
  Untimely internet and power cuts, hardware and software malfunctions. Lack of technical teams in schools that can intervene on time. At least in schools with informatics infrastructure, there must be informatics staff that can guide (T4).
  Opportunities in our school are very limited. We do not have technological equipment and since the electricity is cut off frequently, we have to teach with classical methods (T6).
  The most important problem is the lack of technological equipment (T7).
  Inadequate physical conditions of schools and classrooms and limited facilities (T15).

Inadequate Level of Readiness
  It can be said that students have very different socio-economic conditions (T2).
  One of the most important problems is that students have adaptation problems towards innovations (T16).
  The low academic achievement level of the students and the generally insufficient financial support of the students are among the problems we encounter (T18).
  We can say that our students are not able to use technology efficiently. The most important reason for this is that they do not have sufficient economic support (T19).

Discussion and Conclusion

  The mean scores of classroom teachers' views on innovative pedagogical practices show that teachers "often" use innovative pedagogical practices in their classrooms. This indicates that teachers are open to trying new methods, techniques, and materials at a significant level (frequently) in educational practices and they frequently include innovative pedagogical practices in the teaching and learning process in the classroom. In innovative pedagogy, one does not need to produce a new electronic, mechanical or digital device, but needs to do something in a different and better way (Redding, Twyman, & Murphy, 2013). Thus, changes or ideas that will improve an educational practice are perceived as new by someone and subsequently accepted as an innovative pedagogical practice, while it requires the formation of learning in those who take part in this process (Garcia, 2011). Based on this, it is thought that teachers make instructional initiatives designed with different perspectives in the teaching and learning process in the classroom, which is also consistent with the related studies in the literature (Yılmaz-Öztürk, 2015; Parlar & Cansoy, 2017; Kocasaraç, 2018).

When the effect of independent variables on teachers' innovative pedagogical practices was investigated, the variables of gender, the number of the students in the classroom, and teachers' education level were found to be ineffective variables for teachers' innovative pedagogical practices, which is also consistent with the results of the related studies in the literature (Köroğlu, 2014, Özbek, 2014, Kılıç, 2015, Öztürk-Yılmaz, 2015, Kaya, 2017, Abbak, 2018, Kocasaraç, 2018, Yılmaz, 2018). The relevant literature stated that the number of students in the classroom is an important variable that affects the teachers' pedagogical choices, and as the number of students in the classroom increases, it becomes difficult for the teacher to use different teaching methods and techniques (Küçükahmet, 2009). In addition, in the interviews with teachers, teachers complained about the crowded classrooms, "*In order*

for us to be innovative, the teacher should be more interested in art and science. However, the teacher cannot improve himself and chooses the one because of the crowded class size (T1). ", "*The crowded classroom is the problem we encounter while doing innovative pedagogical practices* (T2, T12)". When the relevant literature and teachers' views are considered together, it is understood that the large class size makes it difficult for classroom teachers to practice innovative pedagogy. Here, it may be more sensible to interpret such an increase, which is not statistically significant, as a random increase. As for the teachers' education level to be an ineffective variable for the innovative pedagogical practices, this can be explained with the fact that education system in Turkey has not yet initiated a conscious and planned attempt to enhance innovative skills and innovative practices in schools despite the intended acts mentioned earlier. In order for the educational level variable to be a significant variable on teachers' innovative pedagogical practices, undergraduate and graduate programs of teacher training institutions should focus more on such subjects and themes as innovative pedagogy and innovative approaches. Although many developed and developing countries, especially in Europe, try to raise awareness towards increasing innovative skills of its citizenship in higher education institutions (Öğretir-Özçelik, 2019), the desired level has not been fully attained yet.

However the variable of teachers' participating in scientific events was found to be a significantly effective variable, additionally, as the number of the teachers' participation in scientific activities increases, the mean scores of innovative pedagogical practices increase. This mainly results from the relation between innovation and knowledge. Knowledge functions as a basis of innovation, and innovation functions as a basis of knowledge. Thus, the production and sharing of knowledge is a prerequisite for innovation (Demirel & Seçkin, 2008). In an innovative process, one needs to use a wide range of knowledge and skills to create innovation (Kereluik, Mishra, Fahnoe & Terry, 2013). In this context, the participation in events such as congresses, symposiums, and workshops organized by universities and scientific organizations, which are one of the most important institutions where science and scientific knowledge are produced (Argon, Menep & Bayram, 2010) has a positive effect primarily on knowledge, then on innovative practices. Thus, it would not be wrong to say that teachers who witnessed scientific discussions while participating in scientific activities gained new experiences and used these in their teaching context. The other significant variable contributing to teachers' innovative pedagogical practices is the teachers' participation in professional courses on teaching. This means that the participation of teachers in courses related to their profession positively affects their innovative pedagogical practices. The profession of teaching is a dynamic profession that requires scientific resources, change, and development. Student success, the quality of the education, and a significant part of the teachers' performance depend on the teacher's professional development (Uştu, Taş & Sever, 2016). Besides, 21st-century education expects teachers to act as leaders who can follow and implement developing technologies and innovative learning approaches, design learning scenarios, and become part of learning communities (Özdemir, Ferhatoğlu & Aybat, 2015). However, Naifeld & Simon (2017) stated that although the pre-service teachers took courses on innovative pedagogical practices, they had difficulty in making sense of the concept and the integration of technology into teaching and even defining this process superficially or concretely. In another study conducted by Karaman & Kurfallı (2008) it was asserted that teachers' lack of basic knowledge and skills in information technologies leads them to not use these technologies in the education and training process. For this reason, the teachers should care about attending in-service courses related to their professions, and following the developments, improving themselves by reading publications and using technological opportunities (Demirezen & Akhan, 2017). Because attending vocational courses offers

teachers an opportunity to reach theoretical or practical knowledge that will improve themselves and their professional performance, which in the end contributes to their innovative pedagogical behaviours. Finally, another significant variable contributing to teachers' innovative pedagogical practices is teachers' reading scientific, professional, self-development kinds of books. Bitkin (2012) stated that the level of reading books significantly affects the individual innovativeness of preservice teachers. Innovativeness requires a clear knowledge of innovations (Van Braak, 2001) and is innately a changeable feature and hence people do not show a constant level of innovativeness throughout their lives. In fact, people may show different levels of innovativeness in different social situations and conditions (Hirschman, 1980). The information age we live in expects individuals to research, discover, and turn the discovered information into a product. Teachers who will train individuals, on the other hand, must have these qualifications to be a representative role model (Yılmaz & Benli, 2010). In this context, teachers must acquire lifelong learning skills and have the habit of reading (Bozpolat, 2010) especially those which in turn contribute to their professional knowledge and pedagogical practices.

As for the classroom teachers' aims to include innovative pedagogical practices, the teachers applied innovative pedagogical practices to appeal to the individual differences of the students, to ensure permanent learning in students, and to attract students' attention and interest. These themes, in general, give the idea that the teachers use innovative pedagogical practices in their classroom to contribute to the students' learning within the framework of the constructivist approach. Classroom teachers guide younger students at the beginning of their formal education life (Akçay, 2016). According to Piaget's cognitive development theory, primary school students who are in the concrete operational period learn through experiences and their cognitive development can progress through regular interactions with the physical and social environment. However, even if they are in the same class, all students may not be at the same cognitive stage (Schunk, 2011), which leads the teachers to design rich environmental experiences in the classroom. Therefore, classroom teachers need to make their pedagogical choices by taking into account the learners' characteristics such as intelligence, general and special abilities (Koçak, 2014). Dale (1946) states that the use of various techniques in learning activities facilitate learners' recalling at a different level. Thus, the activities in which learners are active and use more senses, and gain concrete experiences should be preferred by teachers (Camci, 2012). In this context, teachers' use of different teaching methods, techniques, and technologies in harmony in lessons also contributes to students' meaningful and permanent learning (Fer, 2011). For this reason, the learning and teaching process in the classroom should be arranged in a way that students can build knowledge on their own based on the constructivist learning theory especially with the help of innovative and interactive teaching methods (Holubová, 2010). Innovative teaching methods and techniques enhance the effect and quality of the teaching and learning process. Innovative teaching techniques not only provide a student-centred learning environment but also make the learning process interesting and understandable for young learners (Khurshid & Ansari, 2012).

The classroom teachers face the problem of curriculum intensity and have the pressure of teaching the topics in time while applying innovative pedagogical practices, which prevents them from allocating required time for innovative practices. Today, intense efforts are made to effectively integrate technology into learning-teaching environments to ensure meaningful and permanent learning of students and to develop 21st-century skills such as entrepreneurship, creativity, collaboration and communication (Kaya & Yılayaz, 2013). In this context, 21st-century skills were introduced in the updated primary teaching programs

(MoNE, 2018). The teachers mentioned that although the new primary school curriculum updated in 2017 emphasizes a student-centred approach, and skills of problem-solving, project making and collaborative learning, it fails to allocate sufficient time for these activities due to the intensity of the curriculum content (Yurtseven & Ergün, 2018). Besides, the teachers frequently face the deficiency of tools, materials, or technical problems stemming from infrastructure while implementing the curriculum and innovative approaches in the classroom (Taşdemir et al. 2018; Can & Çava, 2018; Yurtseven & Ergün, 2018). However, known as the technology age, education of the 21st century has required a different structuring in education systems (Kaya & Yılayaz, 2013). In this case, the learning environments should be equipped with the necessary materials, equipment, and technological devices to simplify teachers' work. Otherwise, it would be impossible to reach the targeted innovativeness level individually and socially, which in the end would lead students to be educated with educational practices far from the 21st-century educational approach and real-life experiences. This will also affect students' readiness levels negatively. The rule of "the more you know, the more you remember" summarizes the effect of readiness on learning. The more knowledge students have about something, the easier they will learn that thing (Terry, 2012). Therefore, taking the students' knowledge and skills as a starting point while organizing learning experiences will make learning easier for students. To that end, the current educational philosophy supports a student-centred approach in which all educational activities should be prepared and designed following the cognitive, affective, and psychomotor development and needs of the learners (Akay, 2015). It is also necessary to design and arrange the learning conditions and experiences suitable for the readiness level of the students. The factors pertaining to the family impact students' readiness level especially that of the children of families with low socioeconomic status due to the inadequate physical structure at home (Farver, Xu, Eppe & Lonigan, 2006). Access to certain resources is limited in low-income families (Raver & Knitzer, 2002), which increases the discrepancy between the home environment and schools' expectations from the student (such as material and equipment supply) and this jeopardizes students' success (Bowman, Donovan & Burns, 2001). As teachers stated, in an environment where the students have limited access to even the simplest materials such as paper and pencil, teachers will not have much of a choice for innovative applications. Therefore, teachers will have difficulty in providing students with concrete experiences of innovative pedagogical practices.

This study was conducted to reveal the classroom teachers' views towards innovative pedagogical practices in primary schools. According to teachers' views, classroom teachers frequently use innovative pedagogical practices in their classroom and their effort to increase their knowledge contributes well to their innovative pedagogical practices. While implementing this pedagogy in their classroom their priority was ensuring the student-centred teaching and learning context for their learners if they could overcome the problems they encountered in the schools. This study has a limitation of analysing the teachers' innovative pedagogical practices were analysed from their own perspectives, thus it may be subjective. To overcome the subjectivity of views large sample size was selected randomly for the study. However, it would be useful for researchers to use different measurement tools and data sources such as observation or document analysis to investigate the teachers' innovative pedagogical practices from a different perspective.

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