Evaluation of Innovative Approaches in Education and Training Practices and Solution Offers

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Abstract

Increasing global competition and rapid development of information and information technologies accelerate social changes. Innovative approaches are used as an important tool to gain a strong place in the race for economic profit and social welfare. Innovation can be created by individuals who are creative and can think differently. Education systems assume new roles and responsibilities on the basis of these variables, and gain new functions in the face of new expectations of society and economy. Establishing and maintaining an innovative system in education and training practices will support beneficial and stable development across the country. The aim of the study is the teachers' views on the extent to which innovative approaches are included in teaching methods and techniques, measurement and evaluation practices, use of educational technologies, organizing educational environments and financing education; to understand and interpret according to the variables of gender, education level and seniority. In order to analyze the relationships between variables related to innovativeness in education, a literature review was conducted using the "document analysis" technique. Qualitative research method was used in order to reveal the current situation and to determine various, common or different perceptions regarding the research subject. The technique of "purposeful sampling" was used to determine the sample of the study and "semi-structured interview" technique to obtain research data. In this study in which innovative approaches were evaluated in education and training practices, almost all of the teachers stated that despite the variables of gender, education level and professional seniority, almost all of them stated that they did not allocate resources for teaching methods and techniques, measurement and evaluation methods, the use of educational technologies, the adequacy of school buildings and equipment, and innovative studies in education. They made suggestions that more innovative studies should be carried out in the education system and the people and institutions that carry out these studies should be supported.

Keywords: Innovation, Education and Training Practices, Education Financing

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Introduction

The transformation of social change into a desired development depends on developing an innovative approach between the past and the future by observing the factors of change of the present time. Innovativeness is defined as the situation of replacing what is now considered insufficient with new but useful and sufficient ones (TDK, 2016). The European Union (EU), OECD countries and other developing countries must maintain their place in the field of global marketing and competition, expand their range of new, different, useful products and services. The European Union Commission draws attention to the development of awareness based on the principle of "dream, create, innovate" (European Year of Creativity and Innovation, 2009). It is possible to collect the most important effects that will affect future life as follows (Sönmez, 2008):

• Scientific and technological progress,
• Accessing, using, evaluating and developing information,
• Pending problems and requirements,
• Willingness to self-actualize.

For this reason, it is inevitable to react positively to the new and to show an attitude in favor of innovation (Kılıçer, 2011) in today's conditions. The transformation of a new idea into a commercial activity (Nafgizer, 2006), the implementation of improved services or processes (Eurostat&OECD, 2006) are defined as "innovation" in EU and OECD literature.

Importance of Innovative Approaches in Teaching Methods

The vision of 21st century education systems; to raise individuals with innovative and creative perspectives. This emphasis on innovation and creativity also affects beliefs and values in the social structure. Therefore, innovative teaching methods and techniques are needed. These changes in teaching methods and techniques (Özden, 2002) force education systems to be more effective in raising individuals with an innovative perspective.

Educational approaches that will realize economic and political variables and develop useful models by keeping these variables under control will be the product of innovative education policies. This paradigm change in education imposes new roles and responsibilities on schools, administrators and teachers. Among the basic skills that students should acquire is developing concrete products for production with innovative, creative thinking and analysis (P21, 2018).

National Quality Framework for National Education in Turkey, published in 2014 by the Ministry of Education, the educational programs that can be considered as the basis of creativity has been recognized as one of the basic learning competencies (FMC, 2015BM / c). In Finland, it is seen that there is continuous investment in quality education and research, training programs based on product development are implemented, and e-learning environments are developed. Dynamism is brought to education through science and technology parks in order to train students with innovative approaches (Öktem, 2009).

Cultural and economic development depends on the use of the cultural capital of society and individuals in a new and beneficial way (Markkula, 2006). In order to create an innovative and strong culture (European Communities Commission, 2009), the material and spiritual elements of the culture must be in harmony. Therefore, students should be

supported to realize their ideas (ATEE, 2007) and they should be made to know different education systems (Baroncelli, Ioan Horga & Vanhoonacker, 2014).

In a study examining innovative idea development skills, it was revealed that while all primary school students produced innovative ideas, 7% of high school students and 12% of university students could not develop innovative ideas (Elçi, 2011). Innovative policies will lead to the development of innovative systems, innovative programs and innovative teaching methods and techniques. Of course, training and development of teachers with innovative knowledge and skills comes first. Teachers 'developing new and more effective teaching methods and using new and more effective technologies (Yılmaz & Summak, 2014) will improve students' vision. Innovative material design and development approaches also increase the innovation level of teachers (Konokman, Yokuş & Yelken, 2016). However, innovative individuals will be raised in modern schools where a free and democratic environment is established and where trust and responsibility prevail (Şahin, 2004).

Importance of Innovative Approaches in Measurement and Evaluation Approaches

The main purpose of innovation in education is to train individuals who can develop products and services by following up-to-date information and technology. To achieve this goal, teaching methods and techniques should be developed on the basis of progressivism and reconstruction (Taş, 2017). It will be appropriate to follow the ways that develop self-confidence by taking lessons from mistakes in the learning process and give importance to creativity in every learning step (Arslan & Eraslan, 2003).

Organizing educational environments, developing designs that will attract students' curiosity and interest and creating corners where different creativity products are exhibited will pave the way for the emergence of innovative ideas. For example, in schools where the bell, which is one of the most important symbols of the behavioral teaching model, is removed, it is seen that the lesson is not limited in time and the interest continues uninterrupted until the activity is completed (Yapıcı, 2007). It will be difficult to train students with 21st century skills (entrepreneurship, collaboration, communication, and creativity, etc.) when practical activities in educational programs are not or cannot be done by teachers (Demir, Böyük & Koç, 2011; Sarıtaş, 2013).

Approaches to measure and evaluate students' achievement levels in the education system should also be innovative. The learning level of the lessons taught with innovative methods and techniques cannot be evaluated with traditional methods. In the literature, there are studies revealing that teachers perceive themselves less in measurement and evaluation techniques in the new curriculum (Gözütok, Akgün & Karacaoğlu 2005; Yapıcı & Demirdelen 2007; Yaşar et al., 2005). Teachers should have an innovative attitude in order to choose, develop, use and evaluate appropriate measurement methods (Atılgan, 2007). In Turkey, starting from the 2006-2007 academic year at teacher training faculties (YOK, 2006) as a separate course "Measurement and Evaluation in Education" was evaluated as an innovative approach to the programming of course.

Importance of Innovative Approaches in Educational Technologies

Innovative education practices are based on strengthening the educational infrastructure. The integration of new methods into education with information technologies, the use of

new design, tools and equipment will reflect an innovation or reform in education (Yamaç, 2001). Harward University aims to transform technology into innovation in education with its "Technology, Innovation and Education" master's program (Taş, 2017). In Turkey, the Ministry of National Education (MONE) by strengthening technical education and to promote; Web-Based Educational Content Development Project Competition Robot Competition, Think.Com, This Is My Job (MEB, 2017; TÜBİTAK, 2017) are organized. In addition, it is thought that opening vocational high schools in private companies and industrial zones and providing incentives for each student will accelerate the innovation process (MEB, 2016). Education Informatics Network (EBA), developed for teachers, students and parents, can be used by anyone with an internet connection; educational contents, fun educational and art activities, etc. It shares different sources of information (video, audio, video, etc.). It also offers limited storage space with certain quotas (Aktay & Eskin, 2016). In some countries such as America, England, China, Australia and Denmark, it has set regional and national educational technology standards (ISTE, 2007; UNESCO, 2002). Standards have also been developed at national level in most European countries (Kılıçer, 2008). These standards, known as the National Educational Technology Standards (NETS), are competences that teachers, students and administrators should know and have about educational technology. NETS standards of educational technology in Turkey is regarded as a guide to use (Multi's, 2008). The basic competencies in the NETS-T (2008) standards in the training of future teachers are: creating digital learning environments and designing assessment activities, being a model and encouraging their creativity by facilitating digital learning (Orhan et al., 2014).

The Importance of Innovative Approaches in Educational Environments

The reorganization of educational environments with an innovative perspective and a special design will add a different dimension to the education system. It is known that educational environments with multiple stimuli that positively affect learning provide permanent learning (Demirel, 1999). Linguistic stimuli provide semantic analysis (Günay, 2007), visual stimuli enable the rearrangement of learning material (Kaya, 2000), and auditory stimuli provide vocabulary and conceptual development (Okur, 2007). In addition, having the number of students per class at the desired level will increase the time that teachers will spare to realize the cognitive, psychological and physical needs of the students. OECD countries have 20 to 25 students per class depending on their class. State schools in Turkey is relatively high in many OECD countries, the number of 35 interests (OECD, 2017). Crowded classrooms also affect the measurement and evaluation techniques used by teachers and cause them to experience some problems (Gelbal & Kelecioğlu, 2007). The adequacy of the laboratory equipment of the schools and the adequate technological infrastructure for applications increase their tendency to follow innovations. Meeting the in-service training needs of teachers regarding the use of technology in the laboratory (Demir, Böyük & Koç, 2011) will contribute to the development of their creativity and innovative vision. There is no need to spend more money or purchase technology to realize innovative approaches in education (Taş, 2017). There is a need to use the resources allocated for education effectively and efficiently. The National Science Board (National Science Board, 2018) published a report comparing 138 countries in terms of R&D activities, innovation and creativity studies. Turkey, ranks 70th.

In studies abroad; perceptions of innovation in learning environments (Könings, Gruwel & Merrienboer, 2007), their contribution to the internalization of innovation (Hsu, Lub

& Hsu, 2007), innovation skills, educational environments and technology (Trilling & Fadel, 2009), the use of e-learning and innovation categories (Loogma, Kruusvall & Umarik, 2011), development of social responsibility through innovative education (Thorsteinsson, 2012), innovation and teacher leadership (Frost, 2012), creative solution finding behavior with different uses teaching methods and techniques (Baroncelli, Ioan Horga & Vanhoonacker, 2014).) is observed.

In research in Turkey; There are studies on factors affecting individual innovativeness. In some of these studies; sharing knowledge with individual innovativeness (Demirel & Seçkin, 2008), science / technology lessons laboratory conditions and teachers 'attitudes to follow technological innovations (Demir, Böyük & Koç, 2011), academicians' individual innovation levels and their approach to web 2.0 tools (Bayraktar, 2012) and technology attitude levels (Örün, Orhan, Dönmez & Kurt, 2015), candidate teachers 'individual innovation levels and techno-pedagogical education competencies (Çuhadar, Bülbül & Ilgaz, 2013), critical thinking and individual innovation (Özgür, 2013), teachers' leadership The relationships between the feature and the level of individual innovation (Kösterelioğlu & Demir, 2014) were discussed. There are studies that examine teachers' individual innovation levels (Öztürk & Summak, 2014).

In the published studies, no study evaluating innovative studies in education within the system was found. This study aims to understand and interpret to what extent teachers incorporate innovative approaches in education and training activities. Since there is no qualitative research that evaluates the reflections of innovative approaches on education and training activities from a holistic perspective, it is aimed to contribute to the literature with this aspect of the study.

Methodology
Purpose of the research
The aim of the study is to determine teachers' views on innovative approaches. For this purpose, teachers';
1. Teaching methods and techniques,
1. Measurement and evaluation methods,
2. Educational technologies,
3. School buildings and equipment,
4. How they evaluate the financing of education in terms of innovative practices has been researched. How the variables of gender, education level and seniority affect these evaluations were examined.

Research Method
In order to analyze the relationships between variables related to innovation in education (Baş & Akturan, 2013; Yıldırım & Şimşek, 2011), a literature review was conducted using the "document analysis" technique and a scope for educational practices was determined. By collecting in-depth information about the research topic, the connections between innovative practices and learning and teaching activities, teaching skills, educational environments, student assessment methods and the use of educational resources and the relationship of all these with personal variables were tried to be made sense. Qualitative research method was used to determine the various, common or different perceptions regarding the subject of the research (Johnson & Christensen, 2012). For this reason, the "semi-structured interview" technique has been chosen and the interviews have been systematized.

Compliance with Ethical Rules

In order to demonstrate attitudes and behaviors in accordance with Scientific Research and Publication Ethics, it has been treated with the necessary importance and sensitivity. Research data were collected from teachers who attended the professional development course held in 2019 and volunteered to participate in the study. The privacy of the participants was protected.

Study Group

The sample of the research was created using "purposeful sampling", one of the non-random sampling methods. In the context of the purpose of the study, teachers from different provinces, branches, education level and seniority were invited to the study in order to collect information on the similarities and differences between the variables, and the principle of maximum diversity was observed with voluntary participation. Participants in the sample of the study are 16 teachers who voluntarily participated in in-service training to be trained as evaluators in the evaluation of innovative projects, selected by the Ministry of National Education for their knowledge and experience of innovative approaches in 2019. The data of the sample of the research are given in Table 1.

Table 1
Data of the Research Sample-1

	Branch				Education Level	
Gender	Pre-school and Class	Social studies	Science	Vocational Courses	License	Post Graduate
Female	4	1	1	0	3	3
Male	3	3	4	1	6	4
Total	7	4	5	1	9	7
Grand total	16					

It is seen that the participants are in a less balanced distribution in terms of gender and branch variables than the education level variable. In determining the research sample, the principle of maximum diversity was acted upon, but it was not used in the study as a balanced distribution could not be provided for female participants according to branch variable. Gender variable, on the other hand, was included in the study considering that it is a basic variable. Data of seniority and position variables are given in Table 2.

Table 2
Data of the Research Sample-2

	Seniority			Working city
Gender	0-9 Years	10-19 Years	20 Years and above	Province
Female	2	2	2	Samsun, Mersin, Nevşehir, Çanakkale, Bartın, Antalya
Male	2	4	4	İstanbul, Sakarya, Samsun, Elazığ, Adana, Bursa, Kayseri, Ankara, Adıyaman, Gaziantep
Total	4	6	6	
Grand total		16		

It is seen that the participants are in a balanced distribution according to the seniority variable. When looking at the variable of duty, it is seen that there are generally participants from all regions. The workplace variable of the participants was not used in the study because it was thought not to be suitable for comparison. Accordingly, general information about personal variables included in the research sample is as follows:

Table 3
Data of the Research Sample-3

Ranking	Participants	Gender	Education Level	Seniority
1	F1	Female	M	23
2	F2	Female	M	20
3	F3	Female	M	13
4	F4	Female	U	10
5	F5	Female	U	8
6	F6	Female	U	7
7	M1	Male	M	25
8	M2	Male	M	23
9	M3	Male	M	21
10	M4	Male	M	21
11	M5	Male	U	18
12	M6	Male	U	17
13	M7	Male	U	15
14	M8	Male	U	15
15	M9	Male	U	9
16	M10	Male	U	8

According to the demographic variables of the research sample, the number of female participants is 6, the number of male participants is 10; The education level of female participants is undergraduate (U) 3, master (M) 3; The education level of the male participants is undergraduate (U) 6, master (M) 4; The seniority of female participants is 2 between 0-9 years, 2 between 10-19 years, 2 between 20 years and over; It is observed that the seniority of male participants is 2 between 0-9 years, 4 between 10-19 years, 4 between 20 years and above.

Data Collection Tool, Validity and Reliability

The data collection tool consists of a total of 5 "semi-structured open-ended questions" below, which were created by taking into account the results of the researches reached by the relevant document review and literature review.

1. How do you evaluate the teaching methods and techniques used in educational practices in terms of innovative approaches?
2. How do you evaluate the measurement and evaluation methods / techniques used in educational practices in terms of innovative approaches?
3. How do you evaluate the educational technologies used in educational applications in terms of innovative approaches?
4. How do you evaluate the school buildings and equipment in terms of the implementation of innovative approaches?
5. How do you evaluate the financing of education (management and adequacy of school budgets) in the realization of innovative approaches?

For the content validity of the research questions, a rich description (Creswell, 2013) validity strategy was used by examining the information / documents obtained through literature review and data collection tools used in similar studies. However, their suggestions were evaluated by referring to the opinions of faculty members specialized in qualitative studies in educational sciences. The personal characteristics of the participants and the research data were given with a detailed descriptive analysis table, and the research subject was tried to be understood clearly within the scope of the variables within the scope of educational practices. The research data were detailed as much as possible and the credibility of the study (Creswell, 2013) was supported. Within the scope of the research, the focal points of the statements of the participants are included in the tables in the findings section of the research. According to Creswell (2013), the reliability of a high quality voice recorder can be increased. However, due to the negative attitude of the participants to the tape recorder, the interviews were recorded in writing and they were re-read and confirmed. In order to increase the internal and external reliability of the data collection tool, the entire research process has been explained in detail.

Interviews made with the participants in the study by appointment in advance were recorded in writing, and the data were analyzed by obtaining their approvals. In the analysis of the research data, each interview question was effective in determining the main themes. The opinions of the participants are separated by pre-codes. Similarities and differences and situations encountered were filtered (Kumral & Saracaloğlu, 2011), divided into codes, and associated with themes by determining categories. Sample expressions of the participants supporting the themes are included in the findings section. While conveying the expressions of the participants, male participants M.1. female participants F.1. It is coded as. The theme that the participants gave their opinion on is shown in the table. The frequency and percentage values of how often the expressions in accordance with the themes repeat are indicated in the tables of findings (Miles & Huberman, 1994). Eisner's 'description', 'interpretation' and 'evaluation' processes (cited in Kumral & Saracaloğlu, 2011) were followed, a logical link was established between the data, and a conclusion was reached by supporting with other research results. In the determination of the research sample, the principle of maximum diversity was acted upon, however, it was not included in the analysis, discussion and interpretation sections since a balanced distribution could not be provided for female participants according to the branch variable and the position variable was not considered suitable for comparison.

Findings

1. Findings Regarding Evaluation of Teaching Methods and Techniques in Terms of Innovative Approaches

Three themes have been identified regarding the perceptions of the participants regarding 'Teaching Methods and Techniques': (1) Those who stated that the teaching methods and techniques were innovative -Yes, (2) Those who stated that the teaching methods and techniques were not innovative-No, (3) Suggestions for instructional methods and techniques to be innovative-Sug. Table 4 is given below.

Table 4

Evaluation of Instructional Methods and Techniques in Terms of Innovative Approaches

Theme	Category	Code	N	%	*f*	Sample Statements
Yes (M9, M10, F6)	Technological Hardware	*EBA and interactive whiteboards	1	6%	1	M.9. Largely innovative. The strongest part of the Ministry is EBA and interactive boards.
	Use of Technology	Successful but not innovative methods	2	13%	2	M.10. There is a smart board, but smart teachers should be trained. F.6. Slide presentation does add some success, but is it innovative?
No (F1, F2, F3, F4, F5, M1, M2, M3, M4, M5, M6, M7, M8)	Teaching Methods	Using classical methods	13	81%	13	F.3. Educators are closed to change and do not follow current developments. F.4. Isolation of teachers using innovative methods.
	Physical Structure	Crowded classes	7	44%	7	F.2. As the number of students increases, motivation decreases, it becomes difficult to observe the student.
	Teacher Psychological Background	Professional burnout	5	38%	6	F.1. There is a group of people who see teachers working to innovate as a problem. M.3. What feels worthless disappears over time. F.5. There are also teachers who are enthusiastic when they see sample applications but give up at a slight obstacle.
Sug.	Between gains coordination	Interdisciplinary cooperation	13	81%	18	M.4. Approaches that encourage thinking like P4C should be used. M.8. Finding activities, activities that offer a learning experience should be integrated into the lessons. F.5. Social media and MoNE collaborative approach should be developed.
	Physical Structure	Classroom system should be passed	11	69%	11	M.7. He / she should be able to set up his classroom with interesting materials according to the theory of multiple intelligences. F.2. Classroom system brings creativity.
	Use of Technology	Incentives for technology applications	9	56%	9	M.7. We need teachers who can prepare materials that can use technology. M.10. Children should be able to express their imaginary world with the virtual world and make them feel with technology.

Theme	Category	Code	N	%	f	Sample Statements
	Collaboration with Stakeholders	Collaboration with **NGOs, local governments, universities	7	44%	7	M.7. Cooperation should be made with universities. Students should also take lessons from experts in different professions. F.3. Projects with social stakeholders, collaborators or sponsors should be worked on.

*EBA: Education Information Network.
**NGO: Non-Govermental Organizations.

It is seen that the participants expressed more opinions about not using innovative teaching methods and techniques in terms of technology, equipment and usage. The main reason for this is that they do not know the innovative methods, the physical infrastructure of the schools and the psychological conditions of the teachers are shown. Three participants with less senior and undergraduate degree than others stated that technological equipment was sufficient in terms of innovative applications in teaching methods and techniques, but the use of technology was insufficient. In terms of gender variable, it is seen that there are relatively more men than women who express the opinion that teaching methods and techniques are innovative.

2. Findings Regarding Evaluation of Measurement and Evaluation Practices in Terms of Innovative Approaches

Three themes have been identified regarding the participants' perceptions about 'Measurement and Evaluation in Education': (1) Those who express their opinion that measurement and evaluation in the education system are innovative-Yes (2) Those who state that measurement and evaluation in the education system are not innovative-No (3) Suggestions made for the innovation of measurement and evaluation in the education system-Sug. Table 5 is given below.

Table 5
Evaluation of Measurement and Evaluation in Education in Terms of Innovative Approaches

Theme	Category	Code	N	%	f	Sample Statements
Yes (F1, M2)	Development oriented	Feedback for improvement	2	13%	2	F.1. We are more innovative than before. M.2. Following the student has increased.
No (F2,F3, F4, F5, F6,M1, M3, M4, M5, M6, M7, M8, M9, M10)	Innovation level is not enough	Partially innovative	1	6%	1	M.8. We now use different types of questions in exams. Not an innovative approach, but this is a change.
	Exam oriented	Measuring for the exam	14	88%	19	F.4. We cannot measure and evaluate according to the characteristics of the courses. M.6. It is legally difficult to prepare our own measuring instruments.
	Class pass oriented	Existence of pass-stay system	14	88%	17	F.2.Elementary school turns into education after the second grade. It becomes important to pass the class and stay.

Theme	Category	Code	N	%	f	Sample Statements
						M.3.Measurement is done for sequencing purposes, not for development.
Sug.	Individual development	There should be process and synthesis-oriented evaluation on the basis of the individual	15	94%	18	M.3. The responsibility for learning is mostly not with the student. M.5. Individual measurement and evaluation should be done. F.6. Our failure in reading comprehension is reflected in our failure to use technology. M.7. There should be an assessment system that measures the ability to use what they have learned in life. F.8. We should also evaluate the way forward with pioneering questions.
	Result and process oriented evaluation	STEM, Project product-based measurement	12	75%	15	M.10. The transfer of knowledge to life can only be achieved through projects, the student should show what he knows with what he produces.

As seen in Table 5, the participants expressed more opinions that they did not find the measurement and evaluation methods innovative. It was stated that the biggest obstacle to innovation is the exams and the class passing system. Participants think that measurement and evaluation should be process and result oriented in order to support individual development. When we consider the participants' evaluations in terms of gender variable, no significant difference was observed. It was observed that only 2 participants whose education level was master and more senior expressed a positive opinion.

3. Findings Regarding the Evaluation of Educational Technologies in Terms of Innovative Approaches

Three main themes have been identified regarding the perceptions of the participants regarding 'Educational Technologies': (1) Those who expressed an opinion that educational technology applications are innovative-Yes (2) Those who stated that educational technology applications were not innovative-No (3) Suggestions made for educational technology applications to be innovative-Sug. Table 6 is given below.

Table 6
Evaluation of Educational Technologies in Terms of Innovative Approaches

Theme	Category	Code	N	%	f	Sample Statements
Yes (F1, M3, M1)	Use of technology	Using technology in school	3	19%	3	M.3.Fatih project increased the use of technology. F.1. With the latest developments, there is progress, although it has not spread to the general public.

No (F2, F3, F4, F5, F6, M2, M4, M5, M6, M7, M8,M9)	Technological infrastructure	Lack of technology	13	81%	15	M.6. Teachers do not use technology suitable for the lessons. F.6. Our internet infrastructure is insufficient.
		Problems in using interactive whiteboards	11	69%	13	F.2. Our training content and application contents are insufficient.
		Technology difference between schools	9	56%	11	M.4. There is no e-content for every course. F.5. It is sufficient if the socio-economic status of the environment where the school is located is good.
	Use of technology	Teachers' low technology skills	7	44%	11	M.7. The technology skills of the teachers are very insufficient.
Sug.	Encouragement	Use of technology should be encouraged	11	69%	13	M.3. The use of EBA should be increased by the point system. F.6. The use of technology skills should be linked to career advances. F.4. Technology should be used to improve thinking skills. M.4. Especially in vocational high schools, a structure that produces and sells technology should be established. Collaborations should be increased.
	Equipment of science laboratories	Science laboratories should be in every school, it should be enriched	8	50%	13	M.8. Science laboratories should be established in every school. The monthly internet quota of schools should be increased.

As seen in Table 6, most of the participants did not find the educational technologies used in education and training innovative. Especially, they expressed the inadequacies in technological infrastructure and use of technology. Three of the 6 participants, who have higher professional seniority than the others, mentioned that the Fatih project has made a progress even if it has not spread to the general. The number of participants expressing positive opinions is less than half of graduate students. Male respondents reported slightly more positive opinions than females.

4. Findings Regarding Evaluation of School Buildings and Equipments in Terms of Innovative Approaches

Three main themes were determined regarding the perceptions of the participants regarding 'School Buildings and Equipment': (1) Those who stated that school buildings and equipment are sufficient for innovative applications-Yes (2) Those who stated that school buildings and equipment are not sufficient for innovative applications-No (3) School Suggestions for buildings and equipment to be sufficient in terms of innovative applications-Sug. Table 7 is given below.

Table 7

Evaluation of School Buildings and Equipments in Terms of Innovative Approaches

Theme	Category	Code	N	%	*f*	Sample Statements
Yes (F5, M9)	Physical structure	New school buildings and equipment are relatively better	2	13%	2	M.9. The new buildings are nice but not suited to the type of school.
No (F1, F2, F3, F4, F6, M1, M2, M3, M4, M5, M6, M7,M8)	Physical structure	Building a school with the same type of projects	14	88%	16	F.4. The same type of projects are used in school constructions, it cannot be legally ruled out. M5. No school can be built to suit the needs of the region. M1. Buildings suitable for the school type are not built.
		Conversion of idle buildings into schools	10	63%	10	F.2. They turn idle buildings into schools. Then we put a lot of effort into arranging it according to your needs.
	Physical Hardware	Inadequate physical equipment	11	69%	15	M.8. Our buildings are multi-storey and receive insufficient light, and their gardens are also very narrow.
Sug.	Education environments	Rooms / corners etc. where different needs are met. It should be: Parent meeting and room, exhibition, museum, cinema-theater, event hall, living learning environments, rooftop observatory, virtual reality libraries, winter and summer garden etc.	12	94%	25	M.10. Students should have an environment in which they show their creativity. F.4. Students should have corners in the classroom where they produce. M.7. Schools should have environments that reveal talents. F.1. Educational environments should be diversified as campuses. M.8. There should be botanical corners, traffic corner, and reading areas in nature.
	Physical structure	The needs of the region should be taken into consideration in school construction	12	75%	15	M.3. Attention should be paid to the field report prepared before the school buildings are built. F.2. Earthquake resistance should be especially checked. M.6. Schools should be colorful, colors dominate the brain. Different architectures affect students.
		School types and levels should be taken into consideration in the construction of school buildings.	11	69%	14	M.1. Vocational high schools should be built near the industry, science high schools / science and art centers should be built F.4. Psychological factors should be taken into account in the design of school buildings.
		A class should be given to every teacher	4	25%	4	F.2. Every teacher should have their own class. M.3. Teachers should reflect their imaginations in their classes.

In Table 7, for most of the participants, physical structure and equipment are seen as important in the implementation of innovative approaches. Although only two people with less seniority compared to the other participants find the new school buildings and equipment nice, they still do not find it sufficient in terms of innovative applications. The education levels (undergraduate) of the participants who gave positive opinions are the same. It is seen that the number of females (1) and males (1) is the same in terms of gender variable.

5.   Findings Regarding the Evaluation of Educational Financing in Terms of Innovative Approaches

Three themes have been identified regarding the participants' perceptions about 'Financing Education': (1) Those who stated that sufficient resources were allocated to innovative practices in terms of financing education-Yes (2) Those who stated that sufficient resources were not allocated for innovative practices in terms of financing education-No (3) Suggestions for resource allocation-Sug. Table 8 is given below.

Table 8
Evaluation of Education Financing in Terms of Innovative Approaches

Theme	Category	Code	N	%	*f*	Sample Statements
Yes (M1)	Sufficient budget	Enough source	1	6%	2	M.1.The budget is actually sufficient, but resources are shared by schools and other relevant higher institutions.
No (F1, F2, F3, F4, F5, F6, M2, M3 M4, M5, M6, M7, M8, M9)	Insufficient budget	Insufficient source	15	94%	19	F.4. Primary schools do not have a budget of their own. Needs are met with the donation of parents. M.9 Share is allocated to province / district *MEM from school income
		Lack of functional and purposeful expenditure	13	81%	16	F.3. School principals are in constant search for resources. F.2. Limited authority to use the budget to suit school needs. M.3. School administrators do not want to take risks. F.1. We do not give schools the right to manage the budget.
Sug.	Private and autonomous budget	Autonomous	13	81%	15	F.2. The school should make its own budget plan. M.4. The school principal should be authorized to use the budget. Should be able to accept donations.
		Private	9	56%	9	F.5. If an event is to be held at school, it should be able to use its own budget. M.9. Teachers should not pay for activities themselves.
	Budget support	Municipality and NGO support should be	8	50%	11	M.6. Resources should be transferred directly from the Municipal Budget. F.1. Municipalities, NGOs and other sectors should provide financial support to schools.

	It must be a producing school	8	50%	10	M.7. There should be green technology in schools. Appropriate parts of the school should be able to be rented. M.8. Schools should be able to produce projects and sell their products.
Budget manageme nt and control	Out-of-school inspection	5	31%	6	M.6. Schools should be supervised by the board of trustees.
	Financial management training should be given	5	31%	5	E.10. The municipality should control the school. F.6. School administrators' knowledge of finding and using financial resources should be improved.

*MEM: National Education Directorate

In Table 8, it is seen that almost all of the participants want sufficient budget and spending authority to reflect innovative approaches to educational practices. It is observed that only one male participant who expressed a positive opinion had the highest level of education and seniority. Although he expressed a positive opinion, it is noteworthy that he mentioned that the financial resources allocated for schools officially were not transferred to the school.

Discussion, Conclusion and Recommendations

The aim of the study is to determine teachers' views on innovative approaches. Teachers stated more that they did not find the teaching methods and techniques innovative.

Evaluation of teaching methods and techniques in terms of innovative approaches; Most of the teachers stated that they did not find the teaching methods and techniques innovative. It is stated that classical methods are used in more crowded classrooms and professional burnout affects teachers negatively. It is suggested that integrating technology applications into education with interdisciplinary approaches, transition to the classroom system and establishing cooperation with other stakeholders of education will be effective. These findings show that creating a field of application for students in acquiring innovation skills, using technology with the curiosity of critical thinking and discovering within ethical values (Trilling & Fadel, 2009), and their ability to solve daily problems will be developed with different teaching methods and techniques (Baroncelli, Ioan Horga & Vanhoonacker, 2014) supports their views. In addition, it supports the studies that stated that crowded classes negatively affect the development of students 'self-regulation skills (Doğan & Taşkın, 2014), studying and active learning levels (Günaydın, 2011) and teachers' classroom dominance (Paliç, Keleş, 2011).

Evaluation of measurement and evaluation methods in terms of innovative approaches; Most teachers think that current assessment and evaluation methods are not innovative. The reason for this is; They showed that the innovative assessment and evaluation methods are not known, and the education system focused on passing a class and exam. It has been suggested to switch to an assessment-evaluation system that follows the individual's learning process and focuses on the project-based learning process. These findings indicate that teachers perceive themselves inadequate in assessment-evaluation practices (Çakan, 2004), and that they need in-service training in the preparation and implementation of alternative assessment and evaluation tools (Birgin, Çoruhlu, Nas &

Çepni, 2009; Çelikkaya, Karakuş & Demirbaş, 2010, Duban & Küçükyılmaz, 2008) supports the research results.

Evaluation of educational technologies in terms of innovative approaches; Most of the teachers think that educational technology applications are not innovative. Although they liked the EBA and Fatih project implementations, they stated that there are significant differences between schools in terms of technological infrastructure and technology competence among teachers. It has been suggested to give incentives to educators who use educational technology applications with an innovative approach, and to show all students the relationship between science and life by establishing science laboratories in all schools. It was stated that teaching the use of technologies that encourage production will pave the way for the emergence of innovative ideas. MoNE has included the aim of raising science literate individuals in education programs starting from primary education (MoNE, 2018). There are studies showing that the knowledge in the field of science contributes to the rearrangement of the beliefs and knowledge areas of teachers (Gess-Newsome, 2015; Hume, Cooper & Borowski, 2019). These studies support the suggestion that science laboratories should be established in all schools and the finding that students can develop creative ideas by establishing a more comfortable connection between science and life.

Evaluation of school buildings and equipment in terms of innovative approaches; Teachers consider the physical infrastructure of schools insufficient in terms of the emergence of innovative ideas. It is seen that they criticize the use of general project drawings in the planning of school buildings and equipment and the conversion of idle buildings into schools. It is recommended that educational expectations and needs should be taken into account in the construction and equipment development of schools, attention should be paid to regional differences, and opinions of educators and other stakeholders should be taken into account. These findings support the results of the research that the physical and social environment of schools is important on the motivation, attitude and behavior of education staff and students (Özer, 2014), and that there are no standards in terms of physical structure, equipment, infrastructure and materials (Göksoy, 2017).

Evaluation of education financing in terms of innovative approaches; Most of the teachers stated that sufficient budget is not allocated for innovative studies. It was pointed out that the school budget was insufficient and not used functionally. In-service training suggestions were made for schools on autonomous and special budgets, municipal and NGO support, incentives for production and financial management. School administrators need to strengthen their competencies in financial management (Altunay, 2017; Bülbül 2012), education expenditures made by the public are below the OECD average (ERG, 2009), managers are inexperienced and unwilling to cooperate in the field of NGO and education, and the state (politicians, bureaucrats and civil servants) support the results of the research that they show a biased approach (Karataş, 2008).

In this research, in which innovative approaches in education and training practices are evaluated with a holistic approach; Although teachers differ in terms of gender, education level and seniority variables, almost all of them expressed negative opinions about teaching methods and techniques, measurement and evaluation methods, use of educational technologies, adequacy of school buildings and equipment and allocating resources for innovative studies in education.

Education systems should help students create an innovative and strong culture. Teachers should use new and more effective teaching methods that will support these acquisitions of students, create digital learning environments, select and develop appropriate measurement methods and make accurate evaluations. Students' creativity should be supported at every stage of learning. It should be ensured that students have basic competencies in the field of educational technologies, and educational environments should be diversified and differentiated. From the financing of education, resources should be allocated for innovation and R&D studies. According to the results of the research, the policy and implementation recommendations regarding innovative approaches can be listed below:

• Teaching methods and techniques that will connect different knowledge disciplines should be developed.
• Alternative methods and techniques that will contribute to the creation of an innovative culture should be developed.
• Environments should be created in schools where students can experience and develop innovation.
• The technological and physical infrastructure of schools should be improved.
• The informatics and technological skills of teachers should be developed and supported.
• Education system; It should be supported in different ways by local governments, the private sector and NGOs.
• Cooperation protocols between schools and local governments, private sector and NGOs should be increased.

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