

## Opinions of ICT Teachers about Information Technology Course Implementations: A Social Media Analysis

### Bilgisayar Öğretmenlerinin Bilgi Teknolojileri Dersi Uygulamaları Hakkındaki Görüşleri: Bir Sosyal Medya Analizi

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#### Abstract

The use of Information and Communication Technologies (ICT) is increasing in education. ICT teachers have important role and responsibilities in ICT world. In this study, the problems of ICT teachers and their suggested solutions that stated by them were evaluated by analyzing their messages and shared information in Internet and social media. Document analysis was used as qualitative data collection method for this study. The research group was consisting of the ICT teachers that have worked in secondary Turkish Schools from July 2012 to July 2013 who used social media. In the study, teachers' opinions and suggested solutions in social media (forums, blogs, Facebook and Twitter) had been obtained and categorized in six area as course compulsory, curriculum, personal rights, job definitions, Fatih Project, ICT *infrastructure* and innovative ideas. The data have been evaluated categorically in frequency and percentage. At the end of the study; it was evaluated that the solution suggestions provide a great asset in education for innovation and changes. In this context, problems about employee personal rights (f=61 and %31.9) have been the most important one and the suggested solutions express legal arrangements to be made. In the second place, obligatory course (f=49 and %29.9) was stated. Inadequacy of the curriculum and the need for update (f=28 and %14.6) was the third most discussed topic. Progressive applications and renovations (f=23 and %12.1) were in the fourth place. In the fifth place, it was expressed that the success probability of the Fatih Project (f=21 and % 11) was low in the current situation and the ICT teachers must be included in the project. Lastly it was seen that the infrastructure and support (f=18 and %9.5) were required for development.

**Keywords:** *Opinion analyzes; ICT teacher problems; social media.*

#### Özet

Bilgi Teknolojileri (BT) kullanımı eğitimde giderek artmaktadır. BT öğretmenleri, bilgi teknolojileri öğretimi konusunda BT dünyasında önemli rol ve sorumluluklara sahiptirler. Bu çalışmada, BT öğretmenlerinin internet ve sosyal medyada paylaştıkları ve kendileri tarafından belirtilen sorunları ve çözüm önerileri kendi mesajlarından analiz edilerek değerlendirildi. Belge analizi bu çalışmanın nitel veri toplama yöntemi olarak kullanılmıştır. Araştırma grubu, Temmuz 2012'den Temmuz 2013'e kadar sosyal medyayı kullanan Türk Okullarında çalışan BT öğretmenlerinden oluşmaktadır. Çalışmada, sosyal medyada (forumlar, bloglar, Facebook ve Twitter) öğretmenlerin sorunları ve önerilen çözümleri altı alanda, ders zorunluluğu, müfredat, kişisel haklar, iş tanımları, Fatih Projesi, BT altyapısı ve yenilikçi fikirler altında kategorize edilmiştir. Veriler, frekans ve yüzde olarak değerlendirilmiştir. Çalışmanın sonunda, çözüm önerilerinin BT eğitimi için büyük bir değer sağladığı görülmüştür. Bu bağlamda, özlük hakları (f=61, % 31.9) ile ilgili sorunlar en önemli konu olmuştur ve çözüm önerisi yasal düzenlemelerin yapılması gerektiği olarak değerlendirilmiştir. İkinci olarak, dersin zorunlu olması (f=49, % 29.9) ifade edilmiştir. Müfredat yetersizliği ve güncelleştirme (f = 28, % 14.6) üçüncü en çok tartışılan konu olmuştur. Çağdaş uygulamalar ve yenilikçilik (f =23, % 12.1) dördüncü sırada yer almıştır. Beşinci olarak, Fatih Projesinin (f=21, % 11) başarı ihtimalinin mevcut durumda düşük olduğu ve BT öğretmenlerinin projeye dahil edilmesi gerektiği belirtilmiştir. Son olarak (f=18, % 9.5) altyapı ve teknik desteğin gelişim için gerekli olduğu görülmüştür.

**Anahtar Kelimeler:** *Görüş analizi; BT öğretmen sorunları; sosyal medya.*

## Introduction

People make judgments about the world around them. Last two decades have also seen a rapid increase in the use of the World Wide Web as a forum where people share their opinions and the details of their lives. Web logs (blogs), online forums, comment sections on media sites, and social networking sites such as Facebook and Twitter all fall under the heading of social media and via user-generated text, capture millions of people's points of view (Fink et al., 2011).

"What other people think" has sometimes been an important piece of information for decision-making process. Internet and the Web have now made it possible to find out about the opinions and experiences of people that are known professional critics (Pang & Lee, 2008).

With the growing availability and popularity of opinion-rich resources such as online review sites and personal blogs, new opportunities and challenges arise as people now can, and do, actively use information technologies to seek out and understand the opinions of others. This study enables opinion-oriented information gathering and interpreting according to addressed opinions by internet based tools. In this article, opinions and suggested solutions of ICT teachers were evaluated regarding their messages and shared opinions in social media. In the first section, an operational definition of opinion analysis and its affects were depicted. In the second section, teacher's opinions were categorized and interpreted and in the last section we draw conclusions and proposed what should be done according to stated opinions and solutions. The purpose of the study is to identify problems stated by ICT teachers and suggested solutions stated by them in social media. For this purpose the following questions were asked to answer:

- a) What are the problems that are faced with by ICT teachers?
- b) What are the suggested solutions for the problems that stated by ICT teachers?"

## ICT in Education

A technology literate population in a meaningful manner to engage in professional, social and civic life is an essential goal (Manochehri & Sharif, 2010). The role of education in realizing this goal has therefore includes computer literacy as key element in the curriculums objectives. Technological developments assist in learning process across all curricular subjects (Buckingham, 2007).

With the use of computers new learning environments have been created. Moreover an analysis of education policy appears to suggest there is a greater impetus on educational institutions to encourage their staff and students to utilize this technology (Selwyn, 2011). It is therefore of merit to assess the access and the use of technology in order to comment on how the technology is being used, and its role and relationship to the teaching and learning experience (Awan, 2012).

With the continuous emergence of new technological developments and innovations today's teachers need to be better prepared and consider new approaches in order to bring information and communication technology skills into their classrooms. According to the UNESCO IT Competency Standards for Teachers, teachers should acquire the skills and standards to empower their students with the benefits technology offers, should teach the subject effectively integrating technology and support the personal development of students (UNESCO, 2008). In order to enhance knowledge about ICT to integrate information and communication technology into educational settings and to become conversant with the use of the Internet and ethical issues concerning the web, a collaborate approach is adopted in most countries in the world (Marti, 2006). On the other hand, problems are frequently encountered, such as technical issues, a lack of equipment or badly management in the schools. Periodically, feedback and results are collated and evaluated and the training programs are adjusted accordingly (Zhang, 2008).

The existing ICT curriculum, which is used to facilitate information and communication technologies in schools, is limited as to the technologies and software provided to learners. Today, however, there are unlimited choices and resources available for meeting expectations. ICT should be used effectively and efficiently in order to overcome possible obstacles in teaching-learning processes and add value to societies' existing structures and cultures (Nutt, 2010). Hence, a new curriculum should consist of

important concepts such as digital literacy, technology use, ethical considerations, security, privacy, programming concepts and cybercrimes from the perspective of both the individual and society. And the technology usage should be integrated into all other courses. Defining IT standards expected from learners, as knowledge, skills and values, is of great importance for defining teacher competencies and learners achievement levels (Thomas, & Knezek, 2008). Creating standards is an effective and important way of learning, since expectations are defined clearly (Steiner, 2012). It is important to consider both cognitive and technical competencies in the curriculum development process. Digital literacy is achieved through the use of digital technologies, communication tools and social networks in the process of accessing, managing, designing, evaluating and creating information by means of cognitive and technical knowledge, skills and values through hands-on experience (Educational Testing Service, 2007). While implementing the curriculum, the key point for teachers here is to choose up-to-date topics and activities (Gülbahar, 2009).

### **The Fatih Project in Turkish Schools**

In the Fatih project, IT tools and resources will be used to address inadequacies in the learning and teaching processes for 620,000 primary and secondary-education students. The aim is to increase learning and teaching opportunities and to enhance the schools by using IT tools and resources. For all classrooms LCD interactive smart boards and tablet PCs will be provided as well as a purpose-designed network infrastructure. In-service training will be provided for teachers to enable them to use and adapt IT tools and resources efficiently within their teaching and learning processes. The five main components of the project are:

- Providing hardware and software infrastructure
- Providing and managing educational e-content
- Ensuring the effective use of IT in the curriculum
- In-service teacher training
- Deliberative, safe, manageable and measurable use of IT.

The project is being carried out by the Ministry of National Education, supported by the Ministry of Transport, and is planned to be completed in 5 years. For supporting the project, a web portal named EBA (Eğitim Bilişim Ağı (tr) – Education and IT Network) is designed in order to address both teachers' and students' needs. In EBA, which is in test use now, there are eight main services, namely: (1) News, (2) e-Content, (3) e-Book, (4) Video, (5) Audio, (6) Images, (7) Forum, and (8) Map. In the News section information about project process, new progresses and some announcements is provided. The e-Content section contains shared work of universities and schools. In the e-Book section sample interactive course books are provided (Gülbahar, Ilkhan, Kilis & Arslan, 2013).

### **ICT Teachers' Opinions in Social Media**

The explosion of social media has created unprecedented opportunities for people to publicly voice their opinions. At the same time, the urgency to gain a real time understanding of citizens concerns has grown. Because of the viral nature of social media some issues rapidly and unpredictably become important. The recent expansion of the web encourages users to contribute and express themselves via blogs, videos, social networking sites, etc. All these platforms provide a huge amount of valuable information that we are interested to analyze (Pang & Lee, 2008).

The opinions, views and experiences of teachers must be consulted in order to assess the affect of technological innovation upon their role as facilitators of the learning process (Roblyer, 2006). From a teaching perspective the issue in terms of the problems of distraction teachers cause when teach and use ICT for educational purposes during educational activities time have been raised. Furthermore, concerns regarding their use to facilitate cheating (Weaver & Nilson, 2005) coupled with the fact that teachers often receive little or no formal training in how to use this technology to teach with (Sipila, 2001) has lead many teachers to question the educational merits and instances when this is a helpful aid and a hindrance (Awan, 2012). Starting from the theoretical realities, in terms of ICT may be quite different from theories, or national requirements, a decision was made to focus of research on Turkish teachers' opinions, and use of computers in the schools.

Research concerning the ICT use in schools suggests that the reported attitude of teachers towards ICT tells us more about the equipment the teacher has access to, the training they have had, and the sort of teaching and learning community they are part of, than it does about the willingness of the teacher to use ICT (Haydn & Barton, 2007). The idea that teachers resist as a result of their personal beliefs is attitude of teachers towards ICT tells more about the equipment (Kennewel, Parkinson & Tanner, 2005).

## **Methodology**

### **The Research Model**

This research was performed to detect the problems that ICT teachers faced with and solution suggested by them in the education process. The data was collected by the messages and information which were delivered by ICT teachers in the social media tools namely blogs, forums, Facebook and Twitter by using qualitative analysis approach. The qualitative analysis is an approach that uses an inductive approach in social studies researches and express the views of the research subjects and definitive data collection technique in natural environment (Bogdan & Biklen, 2006). In qualitative analysis research method, qualitative data collection methods like observation, interview and document analysis are used, it is aimed to present the facts in their natural environment as a realistic and integrated format. The analysis tries to present the existing application samples together with the question "how" (Yıldırım & Şimşek, 2008).

### **The Research Group**

The research group was consisting of the ICT teachers that have worked in secondary Turkish Schools from July 2012 to July 2013 who used social media. In this aspect, it can be said that the ICT teachers that participate in the research have the qualifications to represent the general view of the secondary education institutions in Turkey.

### **Data Collection and Analysis**

In the data collection stage, firstly the social media tools were reviewed that are used by the ICT teachers. So, it was possible to find ICT Teachers' messages in social media. In the analysis stage, data had been gathered from the messages according to the questions stated in the research objectives. For this purpose inductive coding technique, frequency analysis and descriptive content analysis methods were used. By using the inductive coding technique, the concepts from the collected data and the relations between those concepts had been revealed (Yıldırım & Şimşek, 2008). With the frequency analysis that was used in the research, the quantitative appearance of the units had been used and the intensity and importance of particular items had been identified. Also with the frequency analysis, intensity and significance of a certain element have been determined by presenting quantitatively the incidence frequency of units (Tavşanlı & Aslan, 2001). In this aspect, to show the intensity of the opinions and problems that were collected for the research, the frequency ( $f$ ) and percentage (%) values were used comparatively. By doing so, the reliability of the data had been increased by numeralisation of quantitative data, bias had been reduced and possibility to compare the data had been provided (Yıldırım & Şimşek, 2008). During analysis of data, two researchers have themed the data separately, similar themes have been categorized and interpreted. Moreover, in the study, research questions have been answered by social media messages analysis. Some of the data obtained from the research have been given as they are and by this way, persuasiveness has been tried to be ensured (Wolcott, 1990).

For data collection 29 forum, blogs sites and Facebook and Twitter were analyzed and 236 messages were collected and it was seen that 45 messages have the same content and they were discarded. With the descriptive content analysis, 191 messages and shared information that were gathered categorized depending on the themes that are expressed and the results were commented in cause-result relation base. By providing some of the gathered data as it is, credibility of the method was provided (Wolcott, 1990).

## Findings

In order to detect the problems and the solution suggestions for problems of the ICT teachers that participated in the research, social media tools had been investigated and data was collected. Although the problems of ICT teachers have different priorities, generally teachers have almost the same problems. After the analysis, the problems of ICT teachers were categorized under six dimensions; compulsory course, curriculum, personal rights, job definitions, Fatih Project, IT infrastructure and innovative ideas and solution suggestions. In this section, depending on these problems in social media, the findings were *analyzed, commented and evaluated as the following categorized dimensions.*

### Problems about ICT Course Compulsory, Lack of Teaching Course Hours and Solution Suggestions for these Problems

Problems about ICT course compulsory, lack of teaching course hours and solution suggestions for these problems are presented in Table 1.

Table 1. The Problems about ICT Course Compulsory and Lack of Teaching Hours

	f	%
ICT course is elective, it must be compulsory.	15	37.5
Choose of ICT course only by children is a problem.	3	7.5
Course is not graded. This causes dialog and conflict problems between student and teacher.	5	12.5
Lack of the course hours brings additional administrative chores to the teachers.	3	7.5
Course hours should be increased.	8	20
Declaring "Children know everything, they learn computers by themselves at home" is a problem.	6	15
<b>Total</b>	<b>40</b>	<b>100</b>

ICT courses being elective seems to be the most important problem (f=15, %37.5) and suggested solution is for the course to be compulsory. The second important issue is the lack of course hours (f=8, %20) and suggested solution is stated as giving the course at least 2 hours for a week. In third place, the approach of learning computer at home by children themselves (f=6, %15) causes ICT course to be elective and the suggested solution is stated as this is not a valid reason. In the fourth place, ungrading the course arises a dialog problem between teacher and students, and lack of information culture (f=5, %12.5). The suggested solution is grading the course and teaching the ethic rules well. In the fifth place, leaving the choice of ICT course to the students (f=3, %7.5) is a problem and the suggested solution is taking student parents' approval for the course. In the last place the reduction of course hours burdens the ICT teachers with additional administrative works (f=3, %7.5) and the suggested solution here is not give administrative jobs to ICT teachers.

The sample messages stated by ICT teachers about the course being selective are given below:

*"We have fought for years and it was yielded with the declaration that was made today, ICT course became one of the compulsory courses. ICT course that started as selective, had its hours reduced, had its grading removed then with the 4+4+4 system became a course that can be selected with students' choice became a must course for 5<sup>th</sup> and 6<sup>th</sup> grade students. May 28, 2013 became a turning point for ICT teachers."*

*"In order to have ICT course to reach its goals and students to develop a positive attitude against the course, the first precaution to be held is changing the course hours depending on application hours and making it a compulsory course like the Traffic course in 4<sup>th</sup> and 5<sup>th</sup> grades."*

*"The selective course system that breaks the relation between principal and teacher (employer and employee) is not suitable; 'do my work or I won't let your course be selected'".*

### **Problems about ICT Course Curriculum and Suggested Solutions to these Problems**

Problems about ICT course curriculum and suggested solutions to these problems presented in Table 2.

Table 2. Problems about ICT Course Curriculum and Suggested Solutions to these Problems.

	<b>f</b>	<b>%</b>
Despite the fast improvements in ICT field, curriculum is inadequate.	10	35.7
Students' readiness and media literacy is inadequate.	8	28.7
The curriculum is not parallel with other countries according to the PISA criteria.	4	14.3
It is not enough to fill schools with technologic gadgets.	3	10.7
Teacher's subject field knowledge is not enough.	3	10.7
<b>Total</b>	<b>29</b>	<b>100</b>

Although there are fast developments in ICT field, the curriculum in the schools still has the same content of its first day (F=10, %35.7) and the solution is improving the curriculum and make it reach to the internationally accepted level. In the second place, student readiness and media literacy (f=8, %28.7) is not enough and the solution is stating the importance of the course to the students and the course must be compulsory. In the third place, according to the Programme for International Student Assessment (PISA) criteria, curriculum is not on parallel (f=4, %14.3) with other countries. For the solution of this problem, international ICT curriculum should be investigated and the course should be updated. In the last place inadequacy of teachers' field knowledge and filling the schools with technological gadgets (f=3, %10.7) had taken its place. Especially for teachers, update, training and certificates should be given on parallel with international criteria and money should not be spent on useless technological gadgets.

Opinions of ICT teachers about problems in curriculum and sample views about these problems are presented below.

*"...with this curriculum and understanding, even everyone of us are appointed, these problems will not be solved. As long as the unrenewed with respect to the 2013 information data and updates books, selective software courses continue great troubles in information will continue."*

*"In the high schools other than Vocational Schools (General High Schools, Anatolian High Schools, Science High Schools and Social Sciences High Schools) for information technologies education "Information and Communication Technologies" course is provided. The syllabus of the course which was prepared in 2000 had not been updated yet and it is the same with what primary schools students learn in ICT course. As a solution; Syllabus of the Information and Communication Course should be updated and be a must course in middle and high schools. ICT Classes should also be updated according to the improving and changing technologies in 4-5 year periods."*

*"Many countries (like India) became one of the acknowledged countries in information technologies by giving special importance to information in information era. Although it is known that information is a continuously renewed course, did nobody think about renewing the syllabus?"*

### Problems about Employee Rights and Job Definitions of ICT Teachers and Solution Suggestions for these Problems

Problems about employee rights and job definitions of ICT Teachers and solution suggestions for these problems are detailed in Table 3.

Table 3. Problems about Employee Rights and Job Definitions of ICT Teachers

	f	%
Duties of ICT teachers are vague and they are seen like repairmen.	32	52.4
Formatter teachership and norm position appointment is a problem.	10	16.4
ICT teachers should have a union.	5	8.1
ICT teachers are discarded, their positions are getting fewer and their future is unknown.	4	6.6
Contracted ICT teachers should be given positions.	4	6.6
Radiation compensation should be given.	4	6.6
ICT teachers cannot be appointed to the vocational high schools.	2	3.3
<b>Total</b>	<b>61</b>	<b>100</b>

In this category, ICT teachers do not have a definite job description and seen as a repairman (f=32, %54.4) became the most problematic field. Legal regulation is stated as a solution. In the second place, formatter teachership and norm position appointment (f=10, %16.4) is stated and suggested solution is to stop this practice. In the third place, having a union for ICT teachers (f=5, %8.1) is expressed. Besides these, with values of (f=4, %6.4), positions for ICT teachers is reduced and contracted ICT teachers should be appointed and radiation compensation should be given. As the last problem, it is stated that ICT teachers should be appointed to vocational high schools too (f=2, %3.3).

Problems about employee rights and job description of ICT teachers and the given solutions are sampled in following statements:

*"72% of school executives call ICT teachers for the most basic computer programs and it is stated that computer knowledge of executives is very limited. This hard truth surfaced after a survey among 1500 IT students. Using the ICT teachers who were trained to be a guide in transfer to the computer aided education in solving technical difficulties and labor some jobs is very disturbing."*

*"What is this formattership because we don't have any courses? Let's look at the subject: Formattership is not a position or branch. It is an assignment. While obligatory assignment cannot be done, we are becoming formatters by obligation. If formattership is the same with Information Technologies teachers, thus Information Technology Teacher = Formatter; Why can everyone who takes a 180 hour course can be a formatter? If it is voluntary and appointment then why are we made formatters by obligation? There is no other branch that have a job description this vague, there are no other teacher branches that do things that are not appropriate for teachers like repair, even have the only job of repairing."*

*"Except teachers in Vocational High Schools, the Information Technologies teachers in all the other types of High and Primary Schools are not eligible for compensation due to Radiation exposure."*

### Problems of ICT Teachers about Fatih Project and Related Solutions

Problems of ICT teachers about Fatih project and related solutions are stated in Table 4.

Table 4. Opinions of ICT Teachers about Fatih Project

	f	%
It is a problem that Fatih Project is carried without ICT teachers.	12	66,6
People are worried about Fatih Project's failure.	6	33,3
<b>Total</b>	<b>18</b>	<b>100</b>

In this category it is stated that there will be problems in executing the Fatih Project without IT teachers (f=12, %66,6), thus ICT teachers should be involved in the project. In the second place, ICT teachers worry about Fatih Project's failure (f=6, %33,3), thus Fatih Project should be administered well.

Problems of IT teachers about the Fatih Project and their sample suggestions are listed below:

*"ICT Teacher candidates are requesting a meeting from National Education Minister, Prime Minister and President of Turkey to tell why they are needed for Fatih Project and what kind of malfunctions may occur without them involving in the Fatih Project."*

*"According to the IT teachers, in order to reach to the success for the Fatih Project, information technologies courses should be obligatory and 2 hours in primary schools and other teachers in schools also take an obligatory information technologies course in schools."*

*"First of all, at least one norm positions should be opened up in each of the 40000 schools that Fatih Project will be applied in order to support the computer technical systems and other teachers' computer usage."*

### **Problems and Suggested Solutions of ICT Teachers about the Information Infrastructure and Support**

Problems and suggested solutions of ICT teachers about the information infrastructure and support are stated in Table 5.

Table 5. Problems of ICT Teachers about the Information Infrastructure and Support

	f	%
Schools lack technical support.	7	33.3
Problem of unrenewed information technologies classes and computers.	6	28.6
Lack of course material in schools.	3	14.3
Each school needs at least one ICT teacher.	3	14.3
Crowded ICT classes	2	9.5
<b>Total</b>	<b>20</b>	<b>100</b>

In this category, lack of technical support was the biggest problem (f=7, %33.3) and it is stated that ICT teachers are not skillful enough to eliminate this problem. There are no solutions provided to provide the technical support. In the second place, unrenewed information infrastructure and old computers problem are stated (f=6, %28.6), and the suggested solution is providing new computers and new equipment to the classes. In the third place, lack of course material and ICT teachers is stated (f=3, %14.3) and the solution is suggested to provide the course material and appointing at least one ICT teacher to every school. As the last point, crowded ICT classes is stated (f=2, %9.5) and it is expressed that new ICT classes should be established to overcome.

Sample statements of ICT teachers about information infrastructure problem and suggested solutions are presented below:



*"...I'm asking again; where is the infrastructure of this project? In my opinion, lots of questions like 'who will fix when the computer of a student is broken' or 'who will be called when there is a problem about the projection device' are begging for an answer. If I need to give a quick example; recently I was in a town in Erzurum. By coincidence, I asked a 7<sup>th</sup> grade student this question. The answer I got was thought-provoking. I asked "There are new projectors installed, how is it going?". He answered "sometimes there problems about the calibration of the boards. I fix it and I also show the TEACHERS how it is done too"*

*"We want to have those Information Technologies Classes which exist in every school and which were established by spending lots of effort and money and which were not renewed in 5 years be renewed"*

*"Setups that are done for the ICT classes stand on a 6 year old background, and renewing the old technological equipment –our subject is desktop computers and its peripherals-cannot be done still. Those equipment which tend to get broken and already out of warranty affect the success of ICT courses as well as negatively affecting all the other courses that are information supported"*

### Problems about innovative Ideas of ICT Teachers and their Suggestions

Problems about innovative ideas of ICT teachers and their suggestions are presented in Table 6.

Table 6. Innovative Ideas of ICT Teachers about ICT

	f	%
It is essential to switch to a modular teaching approach.	10	43.5
There should be a constant change and renewing and quality of education should be controlled.	4	17.7
Using the social media tools should be carried in an ethical framework	3	13
Life time learning should be supported and one should be armed with current knowledge.	2	8.7
Education Information Network should be used more widespread.	2	8.7
The problem of the inter-regional digital gap of Turkey should be overcome.	2	8.7
<b>Total</b>	<b>23</b>	<b>100</b>

The most important subject that is discussed by ICT teachers about ICT had been the idea that switching to modular teaching approach (f=10, %43.5) will solve lots of problems by separating items independent consisting of modules towards certain objectives. In the second place is continuous change and renewal (f=4, %17.7). In the third place, using the social media tools (f=3, %13) in education. In the fourth and last place, the digital gap problem that exists between regions of Turkey, life time learning and being equipped by contemporary information and efficient and widespread use of Turkish National Education Ministry's Network of Education Information (f=2, %8.7) are listed. Innovative ideas of ICT teachers about ICT is presented below:

*"My suggestion is as following; instead of a single ICT course and syllabus, creating a course pool depending on the development of technology, parallel to the needs of students and society, providing a preparation for vocational education in the level of primary schools, and having this courses setup with modular programming method. These modules should be chosen by teachers depending on readiness of students and capabilities provided by region and school."*

*"Level of development of a country is measured by computer literacy and we are still a country that is still developing."*

*"I'm glad that the Education Information Network which I had been eagerly waiting is functional at last. It makes me really proud to use such a system that excited me greatly and never met something similar."*

### General Categorization of ICT Teachers' Problems

General categorization of ICT teachers' problems are presented in Table 7.

Table 7. Problems of ICT teachers

	f	%
Problems of IT teachers about employee rights and job definition (appointment, position, norm, formatter teachership)	61	31.9
Problems about IT course being must/elective	40	20.9
Problems about improving IT Syllabus (syllabus, course hours)	28	14.6
Innovative ideas of IT teachers about IT	23	12.1
Opinions of IT teachers about the Fatih Project	18	9.5
Problems of IT teachers about information infrastructure and support	21	11
<b>Total</b>	<b>191</b>	<b>100</b>

When we generally inspect the problems of ICT teachers, in the first place is the employee rights and job definitions (f=61, %31.9), second place is the course compulsory (f=49, %29.9), third place is improving the curriculum (f=28 and %14.6), fourth place (f=23, %12.1) is the innovative ideas of IT teachers, fifth place is the problems about information infrastructure and support (f=21, %11) and at last comes the problems about the Fatih Project (f=18, %9.5).

### Discussion and Result

In this research, it is aimed to detect the problems of ICT teachers and the solution suggestions with their own statements. For this reason social media tools like blogs, forums, Facebook and Twitter were analyzed and all stated messages in these media were collected. The texts were analyzed and categorized into six categories and each category was structured according to ICT teachers' stated opinions. Frequency, i.e. repetition, of each sub-item and its percentage were calculated. Primarily, analysis and evaluation had been made for the sub-items in each category. After that, all the categories were put together generally in order to reflect the problems and opinions of ICT teachers.

The course selection becomes the top problem of ICT teachers. ICT teachers suggested the solution compulsory for the course. Besides that, they have stated that the weekly hours of the course is too low and it should be at least two hours for each week and students should be graded for the course.

The inadequacy of the curriculum appears to be the most discussed topic by ICT teachers and it is stated that there should be renovations for the course. It is stated that the students are not prepared enough for the course, the curriculum is not on par with the international PISA criteria, the technologic gadgets are not enough for the success of the course and some teachers do not have enough field knowledge. It is expressed by teachers that students should be motivated by grading the course, avoiding spending money on useless gadgets and having teachers follow the contemporary information literature.

Problems about employee rights of ICT teachers and solution suggestions became the most discussed topic and there were lots of suggestions made. The most important problem was stated as the vagueness of job description of ICT teachers and using ICT teachers as technicians. But they should be treated academically. Formatter teachership and norm positions appointment is not wanted. It was demanded that ICT teachers should receive radiation compensation and they should be able to be appointed to the vocational high schools.

Fatih Project is another issue that it is essential to use the ICT teachers in this project. Besides that, it is stated that the ICT course should be given in the scope of Fatih Project. The project is not being successful widespread.

When we look at the problems and solution suggestions of ICT teachers about the information infrastructure and provided support, it can be seen that there is a great need for technical support in schools but a solution is not suggested about this subject. Besides that it is stated that the infrastructure is not renewed and new and usable hardware should be provided. Lack of course materials, lack of ICT teachers and the crowded ICT classrooms are also stated and it is suggested to have at least one ICT teacher in each school, supply software and hardware and create new classrooms in schools.

When we have a glance at the innovative ideas and approaches of ICT teachers, the stated points are deployment to modular education, continuous renewing and change in positive direction, using social networks appropriately, supporting lifelong education and spreading usage of the National Education Information Network.

Generally, when the problems and suggestions that have been shared by the ICT teachers in social media is inspected, employee rights problems and suggestions about legal actions can be seen as the most discussed point. In the second place comes the course compulsory. Inadequacy of the curriculum and the need for update comes in the third place. In the fourth place it can be understood that innovative applications and renewals on all aspects of the course is required. In the fifth place, it is stated that the success probability of Fatih Project is low with its current state and ICT teachers should be included to the process. In the last place, renewing the existing infrastructure for ICT course and computer applications and increasing the support.

### **Suggestions**

When the messages and information sharing in social media tools have been investigated to detect problems of ICT teachers that are come across during education process and the solution suggestions, the problems of ICT teachers are categorized as course compulsory, syllabus, employee rights and job description, Fatih Project, information infrastructure and innovative ideas. The suggestions that can be provided depending on the research results on this aspect are as follows:

- ICT course must be a compulsory course.
- Course hours should be 2 hours a week.
- Crowded classrooms (classrooms with more than 25 students) should be divided.
- Course should be graded.
- Formattership and Norm situations of the ICT teachers should be redesigned.
- ICT course should be developed and updated constantly.
- A compensation should be given to ICT teachers for exposed radiation.
- IT teachers should be appointed in Fatih Project.
- Criteria of PISA and ICT should be followed.
- Modular education approach should be used.

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