Effects of Changes in Educational Policies on the Emotions of ICT Teachers [*]

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Abstract

The aim of the present study is to examine emotional changes of Information and Communication Technology teachers during the times when alterations take place in their profession in Turkish education system drawing on online discussion forums. In this study, as a qualitative method, the case study method was adopted and the data were obtained from different resources. Firstly, a total of 302,617 online messages which were posted on the online forums between 2005 and 2015 in "Computer ICT Forum" (http://www.bilgisayarbilisim.net/) were analyzed. Then, in order to identify the decisions taken by Ministry of National Education (MoNE) which directly or indirectly influence ICT teachers, the circular notes, instructions, regulations and official correspondings of the institutions between the years of 1995 and 2015 were also reviewed. At the last stage of the study, semi-structured interviews with 30 volunteer participants from the online discussion forum were done to get deeper information about their emotions. Content analysis method was used for qualitative data analysis. The results of the study reveal that the decisions which are influential most in emotions of the ICT teachers in 11 years are related to a project titled as Movement of Enhancing Opportunities and Improving Technology (FATIH), changes in the hours of the ICT course, changes in assessment method of the course, regulational changes in position of ICT coordinators, in getting positions at the schools as an ICT teacher, in ICT teacher appointments and in changing the duty places of the ICT teachers. While these the aforementioned changes were happening, the teachers mostly had feelings of anger, sadness, boredom, desperation and insurgence, and recently, they have had stronger feelings of disappointment, pessimism and burn out because of what they were exposed to experience as an ICT teacher. Furthermore, when analysing the future expectations of ICT teachers, it is observed that all suggestions are based on the desire to fulfill their professions in a more respectful, valuable and trouble-free way and that they desire to feel like being teachers as they are. If necessary measures are not taken and if they are not supported, their negative emotional state will continue to constitute a major impediment before their successful and productive continuation of their professions.

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Introduction

The impairment of professional affiliation of teachers on their decisions of quitting as a result of cognitive, societal and emotional support inefficacy in their early professional lives has become a major problem around the world. When considering existing research studies in the literature, it is emphasized that a number of teachers who take this decision during the early years of their careers is very high (Kagan, 1992; Kelchtermans, 1993). It is observed that the research studies regarding the determination of the reasons for the leaving the profession mostly handle the issue by focusing on the demographical features of teachers or the features of the institution (school). However, it is a reality that these variables are not sufficient to explain their self-perception and perception of their class, how they interpret what is happening about their profession, their opinions and beliefs and their decisions about the continuation of their professions (Hong, 2010). On this point, it is important to take a closer look at the teachers' decision making process, their teaching practices, their sense making process, mindset and moral values, in other words, their emotions. (Fuller, Goodwyn, & Francis-Brophy, 2013; van den Berg 2002; Van Veen & Sleegers, 2009; Zembylas, 2005).

The emotions which take place throughout teaching process play an important role in sustainability of education and ensuring the quality as well as in reducing the level of quitting their jobs, their feeling of burn out while helpful in their professional development, decision making, educational practices, affiliation and motivation (Chen, 2016; Cross & Hong, 2012; Frenzel el al., 2016; Hargreaves, 1998, 2000, 2001; Hong, 2010; Jiang, Vauras, Volet, & Wang, 2016; Sutton & Wheatley, 2003; Tsang & Kwong, 2016; Van Veen, Sleegers, & Van de Ven, 2005). According to Nias (1996), education is not only a technical initiative but also a process connected inevitably to the personal lives of teachers, therefore it is necessary to analyze the emotional experiences of teachers which constitute the reflection of their personal lives.

The emotions are defined broadly as the impressions which are arose in internal world of the individuals by the objects, cases or others (Turkish Language Association [TDK], 2015). Watson and Clark (1994) define emotions as regular and short-term adaptive reactions which an organism develops towards particular events in order to continue their lives and to provide their needs, goals and orientation with the environment. Based upon the definitions in the literature, emotions could be described as reactions which arise in the inner worlds of individuals as a result of certain events or stimulants and which affect their decisions and behaviours. These reactions play important roles in the lives of individuals whether they are expressed verbally or not.

Emotions are studied in the fields such as sociology, psychology and philosophy, and have been studied in the field of education as well since 1990s (Bloomfield, 2010; Darby, 2008; Day & Gu, 2009; Hargreaves, 1998a, 1998b, 2000; Hodgen & Askew, 2007; Kelchtermans, 2005; Kelchtermans, Ballet, & Piot, 2009; Lee & Yin, 2011; Linnenbrink, 2006; Schutz, Hong, Cross, & Osbon, 2006; Taxer & Frenzel, 2015; Trigwell, 2012; Van Veen & Lasky, 2005; Van Veen & Sleegers, 2006, 2009; Zembylas, 2003, 2004, 2005, 2006; Zembylas & Schutz, 2009). In most of the studies, it was found that emotions have important effects on teachers' learning processes, motivation, orientation, explanation of the world and communication with other individuals. For instance, according to Hargreaves (1998a), the concept of teaching contains the subject of emotions in many aspects and it is shaped by societal and psychological constructs. According to Hebert and Worthy (2001), teachers are able to feel different emotions due to the factors such as (1) expectations, personality and requirements of workplace, (2) motivation, (3) behaviours of students, (4) societal and cultural struture of school and (5) political developments and reforms. These emotions might be anger, anxiety and sadness due to variables such as low academic success, negligence and other uncontrollable behaviours of students (Cowie, 2011; Day & Gu, 2009; Trigwell, 2012; Zembylas, 2005), as well as sadness, anger, disappointment and desperation due to reluctant cooperation with other colleagues, school administration failing to solve problems, work overload and challenges and heavy restrictions (Day & Gu, 2009; Kelchterman, 2005; Nias, 1996).

Apart from the variables in the classroom and school environment, one of the factors affecting teachers emotionally is educational initiatives and changes. Teachers are negatively affected especially by the complex, multi-dimensional and contradictory structure of the change, its emergence by ignoring the individuals and their needs, its implication lacking sufficient scientific evidence which proves its effectiveness and its emergence based on assumptions instead of facts (Fullan & Miles, 1992). Teachers are affected negatively because they are only expected to be a part of the change, they are forced to apply "top-down" implications of the change, which are policy makers' orders, while their opinions about the change are neglected and dialogue is not established with them. (Day, 2002; Hargreaves, 1998; Olson, 2002; Van Veen & Sleegers, 2009). Due to different problems realized in the changing process, teachers experience emotions such as sadness, fear, anger, disappointment and anxiety intensely (Hargreaves, 2005; Hong, 2010; Lee & Yin, 2011; Schmidt & Datnow, 2005; Van Veen & Sleegers, 2009; Zembylas, 2004; Zembylas, Charalambous, Charalambous, & Kendeou, 2011). It is a fact that these emotions may bring about an unwilling, inefficient and unhappy environment in schools (Day, Elliot, & Kington, 2005).

According to Fullan (1993), in order to get positive outcomes through a change in education, teachers need to find this change necessary, meaningful and they need to feel a part of this change. In other words, in case that the internal reasoning, beliefs, values and emotions of the teachers are contrary to the change, it is very difficult to implement it (Van Veen & Sleegers, 2009). Therefore, what teachers do, think in the process of change and how they perceive the change are vital factors (Fullan, 1991, 1993; Fullan & Miles, 1992). If aforementioned variables are not understood clearly, future changes may not reach the expected success. However, when considering studies which analyze what teachers experience in the process of change, it is observed that the impact of emotions is usually ignored (Hargreaves, 2005; Kelchtermans et al., 2009; Nias, 1996; Sutton & Wheatley, 2003; Van Veen & Sleegers, 2006; Zembylas, 2010; Zembylas et al., 2011). Yet in order to eliminate negative experiences in educational changes, researchers must determine the deficient parts in implementation process of the change and conduct studies regarding what can be done for the effectiveness of the process and while performing these, they must take teachers' emotions into account.

Numerous initiatives performed in the name of educational reform particularly since 1990 drew the attentions in Turkey. It is possible to categorize initiatives under the titles of teacher education, curriculum regulations, educational management, teacher assignments, financing of the education, technological support and infrastructure studies. Generally, the hierarchical, strict and centralist structure of Turkish education system, traditional, bureaucratic attitude, behaviours and routines of administors and the top-to-bottom implication of the change limit the effectiveness of the changes and delay their implications (Şahin, 2007). On the other hand, in order to maintain its existence effectively in the 21st century just like other countries, there have been increasing studies concerning creative, flexible, innovative individuals who benefit from information technologies effectively by reformulating the existing policies in a way which they can meet future requirements. In order to deliver ICT education effectively, Computer and Instructional Technologies Education Department (CEIT) is established in 1998 in higher education and Computing courses were introduced in primary education. However, a plenty of regulations have been performed by Ministry of National Education over years regarding the title of the computing courses, course hours, grade levels, status of the course as elective or compulsory, curriculum and resources. Additionally, ICT teachers were assigned with various duties and responsibilities under the names of ICT teacher/coordinator, ICT Guidance Teachers or Fatih Project ICT Guidance as of 1990s as a result of a need of working staff guiding technology use, providing support in projects which the MoNE conducts.

It is observed that in our education system within which technological changes/reforms are performed, ICT teachers are important partners of the projects regarding the coordination of technology use in education (Ekici & Yılmaz, 2013; Şanlı, Altun, & Tan, 2015). . ICT teachers do not have sufficient opportunity to express their opinions in the decisions regarding the projects, their suggestions and opinions are ignored where as they are the real implicators of the projects and thus they feel as if they are excluded from the system. ICT teachers experience problems not only about the projects but also about other changes and regulations affecting their fields. While analyzing research studies regarding the problems which ICT teachers experience, the following factors are thought to affect teachers negatively and they can even bring about emotional burnout as well as occupational stress; uncertainities, increasing work-overload coming with reforms and changes in particular, vague job definition, perception of other staff about them as a member of technical service staff in schools, out-numbered classrooms and technical problems in ICT labs, value, number of the course and elective status of the course, inefficiency of the curriculum, problems in teacher education, school management and communicational problems with other teachers with other teachers, students and parents (Altun & Ateş, 2008; Deryakulu, 2005; Deryakulu & Olkun, 2007; Eren & Uluuysal, 2012; Karal & Timuçin, 2010; Şerefoğlu Henkoğlu & Yıldırım, 2012; Topu & Göktaş, 2012; Yeşiltepe & Erdoğan, 2013).

Needless to say, ICT teachers play a big role also in the process of change itself and in the efficient conduct of changes in education system. ICT teachers' justification of change, their experiences in the process and their emotions relating to this are quite important for the efficient and productive progression of the change. However, when analyzing national literature, it is observed that the reasons of the problems which ICT teachers experience in the process of change are not examined and necessary studies are not conducted regarding the determination of how the changes are affected emotionally. It is a fact that no matter what intention and institutitonal base the reforms have, if the "implimenters" of the reforms, what they feel and think are not known, it is impossible for the reforms to reach the expected outcomes (Reio, 2005). Within this context, the main aim of this study consists of the determination of effects of the changes which frequently come up in Turkey and which mainly focus on ICT education and the integration of these technologies into the education system on the emotions of ICT teachers. In addition to this general aim of the study, it is also aimed to present findings about the effects of the changes on ICT teachers' emotions and opinions as well as recommendations and opinions of the teachers about how to apply the changes successfully are presented.

Method

Research Model

This study is conducted based on a case study method as a qualitative research method. The effects of changes, which focus on the integration of ICT into the education system and which are implemented by the MoNE, on the emotions of ICT teachers were considered as a case and this case is analyzed in detail in this study.

Sample

First of all, in order to determine the effects of changes in education on ICT teachers'emotions, the contents which were shared by ICT teachers in an online discussion forum were analyzed. The reason of analyzing the online contents was that these online forums are where participants freely and voluntarily share their opinions in certain issues (Cowie, 2011; Deryakulu & Olkun, 2007). The online discussion forum which was analyzed was determined by using criterion sampling method. For this reason, forum platform was chosen which was created solely for ICT teachers' field, in which teachers shared also their opinions as well as files and materials, regular sharings were included in years, and which was still used efficiently. As a result of analysis performed according to criteria, "Computer ICT Forum" was determined. 302.617 messages shared in "Computer ICT Forum" between 2005 and 2015 were analyzed within the scope of the study.

On the other part, document analysis was performed so as to define changes / decisions affecting ICT teachers. The circular notes, instructions, regulations and official correspondings with the institutions were analyzed to determine decisions taken by MoNE which affect ICT teachers directly or indirectly. Within this process, 215 official documents in total between 1995 and 2015 are analyzed and the points affecting directly or indirectly ICT teachers in terms of workplace and responsibilities were determined. In the last stage of the study, semi-structured interviews were performed with 30 voluntary participants (14 of them are male and 16 of them are female) in the discussion forum to obtain further information regarding emotions of ICT teachers and to experience successful change process by eliminating negative emotions.

Data Collection Tools, Data Collection Process and Analysis of Data

In terms of data collection tools, a form consisting of semi-structured interview questions was formed and also a coding schema was formed to code the online discussions. Content analysis was used to analyse the data. Since there is not an agreement regarding the classification of emotions, a framework was created for the coding of data by using emotion classifications which was introduced by emotion-theorists such as Russell (1980) and Scherer (2001) for the determination of emotions and the codings are performed through this framework. 15,599 messages were coded under emotions themes among 302,617 read messages in the coding process of the data.

Validity and Reliability

Expert opinion form was prepared to determine the credibility of the code list and coded messages and this form was analyzed by two experts specialised in emotions and by two experts performing qualitative study in education sciences. As a result of the analysis, the themes reached to their final form. After coding the messages, 10% of the whole messages was coded by an expert for reliability. Kappa Cohen coefficient was determined as 0.82 for the codings in online discussion forum. Interviews performed face-to-face or by telephone were recorded through voice-recorder. Before starting the analysis, interview voice records were transcribed and subsequently content analysis was performed. In order to measure reliability in interview analysis, the transcripts of the interviews which were done with 6 participants (20%) were randomly chosen and then they were coded by a subject expert. Kappa Cohen coefficient was determined as 0.92. In order to ensure the internal and external validity of the study, data gathered from different data sources were analyzed, all data were recorded, tried to be objectified in the definition and interpretation, direct citation frequently was given and detailed information about the analysis process of the data was tried to be givenData obtained from the online discussion platform were analysed year by year by taking into account of MoNE decisions. Quotations with their frequencies and percentage rates were obtained directly from the online discussion platform and interview extracts were used in the presentation of data. Quotations obtained from the online platform were named as (M = number of messages) and quotations obtained from the interviews were named as (for instance 1-F) according to the coding ranks and gender of the participants.

Findings

Table 1 demonstrates the decisions which affect ICT teachers directly or indirectly in the change process in education.

Table 1. Decisions Affecting ICT Teachers Between 1993 and 2015

Years	ICT Coordinator	Duration of the ICT courses in a week/Elective courses	Curriculum of course	The list of the courses to be taught for base salary	Course Hours and supplementary course hours	Assignments and Displacement	ICT Classroom	Regulations for primary education institutions	Extracurricular activities	Quota of ICT teachers in each school	Dress code	DynEd Project	Student support courses	Media literacy course	Web site	Other-opinion-explanation	Candidate Teacher application	Okullar hayat olsun" (Let the schools be the life) Project	FATİH Project
1993-2004	1	4		4	1		4	1		6					2	1			
2005		1	1					1							1				
2006			1	1	1	1									2	1			
2007	1	1					1	1		1									
2008	2					1	1	1		1									
2009	3				1		1											1	
2010	2	1				1	2	2	1	1									
2011	2						1	1		5		3				1		1	2
2012	3	2	1	1	1	1	1	6			1				1				5
2013	2	3		1	1	1	1	3			2	2			2			2	3
2014	3	1	2	2		2		2		3	1	2	3	1		4		3	11
2015	3	1	1			4		1		3		2	5	3		4	2		21

Decisions regarding computer/informatics started with a directive regarding the 'The Selection, Regulation and Conduct of Computer Laboratories and the Education, Selection and Responsibilities of Computer Instructors and Computer Coordinator Instructors in Formal and Informal Education Institutions Subordinate to Ministry of National Education' in 1993 and since then decisions are taken intensely. When considering Table 1, it is observed that almost every year between 1993 and 2015 decisions were taken about ICT coordinator appointments, Curriculum and Duration of the course, assignments and appointments, ICT classroom, regulations of quota of ICT teacher and FATİH Project as of 2011. Additionally, regulations were applied in certain periods concerning dress code regulations and student support courses; DynEd project and 'Okullar Hayat Olsun' (Let the schools be the life) Project are also noteworthy to examine. Taking into account of the issues which ICT teachers discuss the most on online discussion forum for the past 11 years, they generally discuss the following topics; Ministry of National Education (76.42%), ICT courses (37.45%), FATİH Project (37.06%), ICT coordinator assignment (34.90%), school management (28.22%), assignments and appointments (18.77%), ICT classroom (16.03%) and quota of ICT teachers (15.72%). This finding reveals the effect of decisions taken by MoNE on the intensity of discussions in the forum.

Findings Obtained from Analysis of Online Discussion Platform
Emotions of ICT Teachers on Online Discussion Forum
Figure 1 demonstrates the distribution of emotions expressed by ICT teachers between 2005 and 2015.
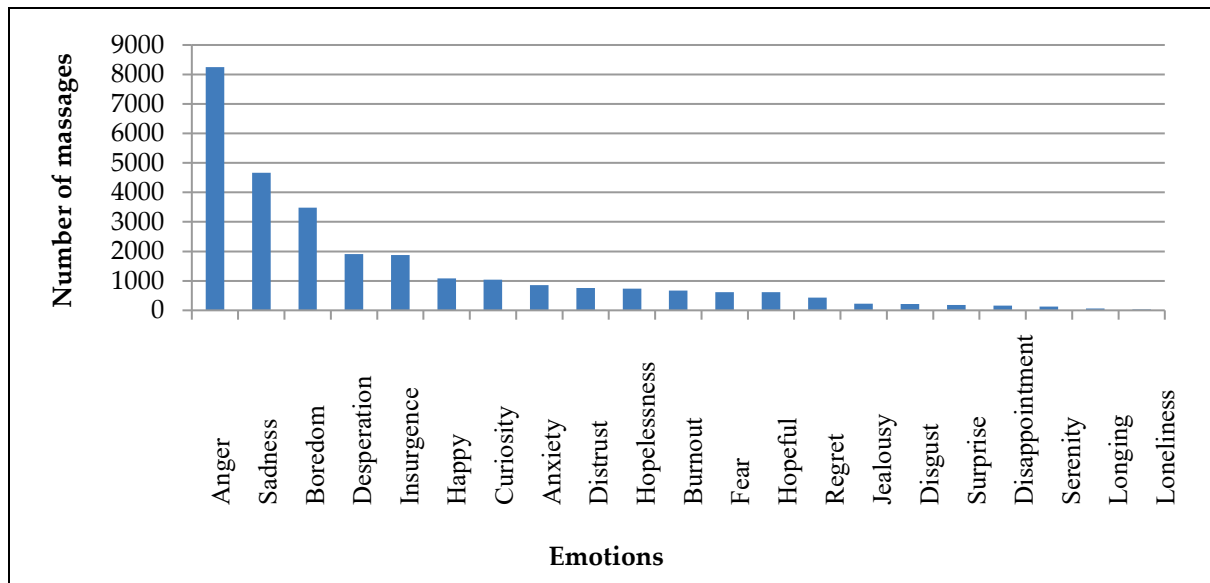

Figure 1. Distribution of Feelings Expressed on Discussion Platform between 2005 and 2015

When analyzing Figure 1, it is observed that ICT teachers express the emotions of; anger (30.63%), sadness (17.15%), boredom (12.34%) and Desperation (6.49%) the most; longing (1.47%) and loneliness (0.09%) the least. It is remarked that they express positive emotions such as happiness and hope very little. Figure 2 demonstrates the distribution of 6 emotions (among over 1000 emotions) which ICT teachers reflect the most year by year.
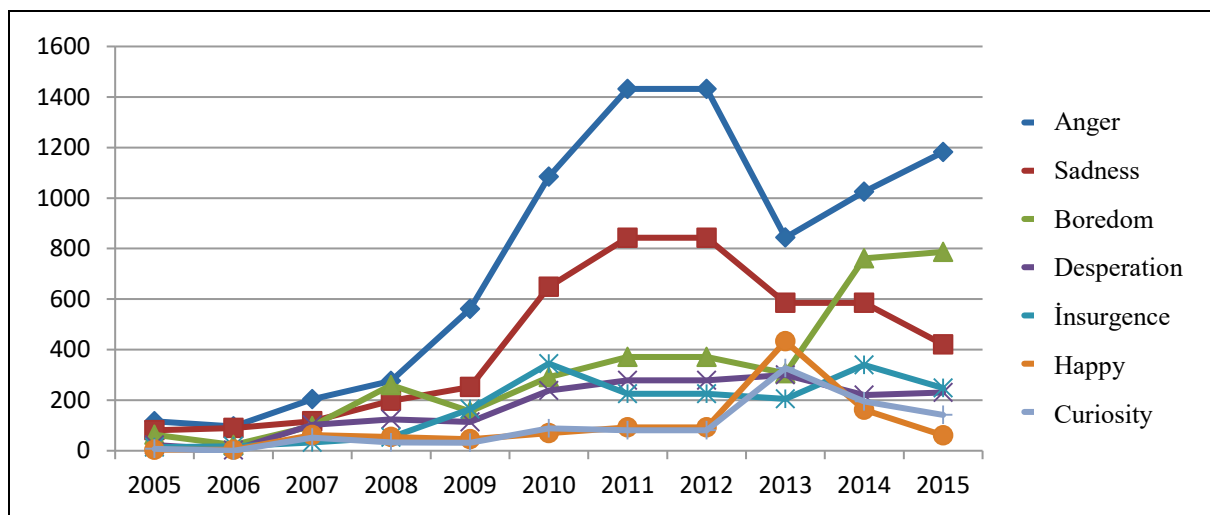

Figure 2. Distribution of 6 Emotions Reflected the Most between 2005 and 2015

When analyzing Figure 2, it is observed that emotions were expressed by ICT teachers almost every year, however sudden changes in emotions occurred in certain periods. Particularly, messages reflecting emotions increased as of 2009, discussions including emotions were at their peak in 2011 and 2012. 2013 is considered as the year during which important changes for many emotions are experienced.

The Effect of Decisions Taken by MoNE on Emotions

Decisions Taken between 2005 and 2009 and Their Emotional Effects on ICT Teachers

The issues which were mainly discussed between 2005 and 2009 on the forum are; course hours, coordinator teachers' assignments, education process of ICT course, assignments to professional and technical education institutions. Particularly the regulations regarding course hours, elective status of the course, non-assesment in the course are the problems which were emerged from the data. Taken its place for the first time in 1997, Computing course was delivered as an elective course in Grades 4, 5, 6, 7 and 8, scheduled for 1 hour or 2 hours per week as an elective course while due to a regulation change in 2005, it was taught in Grades 1, 2, 3, 4, 5, 6, 7 and 8 for 1 hour per week. It is stated in the regulation that computer course is not marked; however elective courses selected by students would be written in learning report cards and official records. A new regulation was adopted in 2007, with this regulation the name of the course was changed to 'Information Technologies' from 'Computing' and its hours were arranged as 2 hours for 4th and 5th grades and 1 hour for other grades. In addition to these changes, the issues such as difficulty in running the lesson in old and insufficient ICT classes, indifference of MoNE towards these issues, school management, perception of the course as an invaluable lesson by other subject-matter colleagues and parents affect ICT teachers negatively. ICT teachers feel mostly sad, angry, desparate and bored as a consequence of these issues. This situation is expressed by two ICT teachers as could be seen from the following quotation in discussion forum:

> *"Just as I am going to begin teaching in the class, one of the students calls out; 'my screen is not turning on!'. I fix that, but then another student yells; 'my mouse doesn't move!', I handle it too. This time another one calls out; 'Ahmet (his classmate) does not let me use the computer!'... What kind of class is this for God's sake? It ended without even starting. I am burnout because of technical problems and also of over-crowded classrooms." (M-2012)*

> *"I am an ICT teacher but there isn't a computer laboratory in the school, how can I teach students? I talked about computers up to now, I sometimes asked the students to take notes, but I don't have any other material available. There isn't even one computer through which I can teach the students in the school. I was appointed to this school in this term, I don't know what to do... I never felt as desperate as I'm now in my whole life." (M-2182)*

One of the intensely-discussed issues as of 2005 is appointments of the ICT teachers as ICT coordinator teachers. Coordinator teachers were assigned with many duties via a regulation which was launched with the training of coordinator teachers in 1993. These duties are mainly about solving problems regarding the efficient use of ICT classrooms, making ICT classrooms available for educational stakeholders to be used also in out of course hours, provision of support to students and teachers and assistance regarding computer use for administrative and other purposes. Increasing work-load with the assignments and confusions in definitions of the roles of an ICT teacher started to distract ICT teachers as of 2005. Additionally, it was declared that the assignments must be done by governorship approvals and not from a single center due to increased number of coordinator teachers by the assignment paper in 2007. This regulation caused different practices in assignments from city to city, even from school to school. With the regulation adopted in 2008, it was declared that in case there is an ICT teacher in a school, the teacher compulsory works as a coordinator teacher. Apart from the problems which were raised by obligatory assignments of the teachers, obscure wordings and controversial statements in the official papers regarding the assignments and different applications mostly caused anger, sadness, regret, despair and insurgence emotions for ICT teachers. This situation was expressed by two ICT teachers as the following in the forum:

> *"I really regret being an ICT teacher. It has been only one month since I started my job but I feel like I spent 10 years. One thing I'm very angry about is that we are considered as a member of technical staff. In addition to the all maintenance works of the school, I sometimes handle with computer works even in the Teacher's Hotel... I want to cry out everyone that we are not mechanics we are teachers." (M-1471)*

"…Why does MoNE always forget while taking decisions that we are teachers? For God's sake, someone should remind them (that we are teachers). Due to their wrong decisions we have trouble with the head teacher every day, enough is enough." (M-5536)

Decisions Taken in 2010 and Their Emotional Effects on ICT Teachers

When it comes to 2010, a rapid increase in negative feelings of ICT teachers was captured in the forum. The decisions taken in this period which mostly negatively affected ICT teachers concern the change made in course schedule, removal of ICT courses from the 4th and 5th grades and instead of ICT courses, free activity was implemented, the obligation of serving in schools which governorships choose for supernumerary teachers in case that they do not request amendments made in assignment and displacement regulation. Since these two changes were implemented in the same period, it caused problems such as some ICT teachers were considered as out of quota in a school and needed to move to a different school; wrong calculations were made by head teachers while adusting the teacher quotas in a school; uncertainties were emerged and ICT teachers felt pressures when they did not want to perform the given tasks and as a result, ICT teachers were negatively affected. In this period teachers were fulfilled with emotions such as anger, insurgence, fear, desperation and insurgence towards MoNE and head teachers. Two ICT teachers expressed the situation as the following;

"…Damn the torpedoes! I'm bored of seeing my name in the out-of-quota list. I submitted a petition for the third time. It's enough, I'm tired. If it will be, let it be. But if it is not going to be solved, no one has the right to fool around a teacher's psychology. I'm tired, I'm burnout, I lost my health. What will happen now? They will assign me to a school, I will be out-of-quota there next year again. This is what is going to happen." (M-21406)

"We feel fear right behind us every moment. I am scared of waking up in the mornings, whether I will be out-of-quota or not." (M-20055)

The effects of the decisions taken towards the coordinator teachers' obligatory assignments in previous years were seen also in 2010. Among other emotions, in particular jealousy was frequently expressed in relation to coordinator teacher assignments in 2010 in the forum. Due to the regulational change about decreasing course hours in 2010, ICT teachers were not able to fulfill the requirements to earn the salary which was calculated based on the course hours, and they needed to accept coordinator duty so that they should not have any problem with teaching courses for extra hours and they should not need to move to a different school. When analyzing the discussions, it is observed that ICT teachers envy physical education teachers and psychological counselors in the school because of their working conditions, working hours and clear job definitions as well as they envy mathematics teachers because of the respect they receive for their profession. One of the ICT teachers expressed this situation as the following:

"School counselors read their newspapers and surf on the internet from 9 o'clock to 15 o'clock and after that they go home, while we rush around without resting even 5 minutes till evening. And we are paid the same amount with these school counselors, if they are paid that amount then we should be paid 10.000 TL. However, no one says anything, we are like sheep." (M-17864)

Decisions Taken between 2011 and 2012 and Their Emotional Effects on ICT Teachers

Years 2011 and 2012 are considered as ones during which ICT teachers felt negative emotions the most intensively. When considering decisions taken in these years, we mostly come across with FATİH Project, course schedule, assignments and displacements, permanent staff, BTR teacher's assignments and amendments made in Law of Basic Education.

FATİH project was designed to provide equal opportunities for teachers and students with the efficient usage of ICTs in classrooms with the protocols signed in 2010. Considering the discussions, it was observed that studies and problems regarding the project became intense in 2011. The reason why

ICT teachers got angry is that they considered the project as a useless investment without any preparation, any support of scientific studies and without determining the requirements. Additionally, ICT teachers experienced very different negative emotions due to new responsibilities such as making available ICT classrooms and ICT supported classrooms, guidance duties, commission duties and solving problems during lessons. These emotions are reflected mostly as anger, sadness, despair, disappointment and hopelessness in the discussions. This situation is expressed by two ICT teachers as follows:

> *"I couldn't understand what kind of Ministry this is? While they are not able to renovate the computer laboratories, they try to apply a system named Fatih project which is 3 or 4 times more costly than renovating the labs. I need an IT class but no one hears my voice. For God's sake someone rescue me from the hands of this incapable Ministry, amen." (M-25905)*

> *"People who are supporting strongly Fatih project are not able to see one thing, or they are able to see but they choose not to see. The matter is that the important thing for qualified education is the teacher himself/herself who will deliver the information, not the technologies or high-level opportunities one has. What is the logic behind not to value the teachers whom are the most important part of this process and to put them into secondary priority ? There is no use to provide people as much as technology you want. . Then you expect productivity from the smartboard, tablet, very interesting." (M-41706)*

One of the decisions taken in 2012 which affected ICT teachers directly was regarding BTR teacher's assignments. Coordinator teachers' assignments were terminated in 2012 and instead of that ICT Guidance (BTR) assignments were commenced. It was stated that with the ICT guidance assignment, assignments would take place firstly in Fatih project schools and assigned teachers would undertake new responsibilities such as guidance to efficient use of ICT tools, solving problems occurring during the lesson, participation in commissions such as purchasing, controlling and accepting ICT tools. However, the working hours of assigned teachers were not explicitly defined yet. Considering the new ICT teacher assignment as only a change of name, ICT teachers criticized it in terms of increasing duties and responsibilities and uncertainities in working hours and unfair applications. Additionally, deficiencies and open-ended expressions in the assignment papers and different applications affected ICT teachers emotionally. They expressed their sadness and despair with anger to MoNE and school head teachers. Two ICT teachers expressed the situation as follows:

> *"It's 2015 and they still try to force me to work between 8-5 by stating that I'm a coordinator. For God's sake, someone states this in the assignment paper: BTRs don't work 8-5!" (M-53648)*

> *"Is this fair? When will this injustice end? They make us think like this in just 8th month of our professional lives, plague on it!" (M-53876)*

One of the most important and discussed decisions taken in 2012 is the amendment to 'Primary Institutions Regulation'. With this regulation, compulsory elementary education period was changed so as to cover students between 6-13 ages and elementary education was separated into two parts named primary and secondary education. Discussions regarding the separation of schools and schooling age attract the most attention in this period. ICT teachers criticized this sudden change due to transfer problems of ICT classrooms resulting from school transformations and increase in out-of-quota teachers. This situation caused anger and boredom at ICT teachers. This situation is defined by one ICT teacher as following:

> *"You cannot put rules into force as you wish in a project which has even no infrastructure. First of all, you need to settle the necessary infrastructure and after that you choose a pilot area and analyse the negative and positive aspects. You should take advice and suggestions from teachers,*

trade unions and education faculties. What kind of a Ministry is this which applies education project without consulting anyone." (M-33686)

One of the decisions which affected ICT teachers taken in 2012 is the change made in course schedule. With the new course schedule, the name and number of lessons of ICT classrooms were changed and while the previous course was elective and 1 hour per week between 6th-8th grades, the new one was regulated as an elective course of 2 hours per week between 5th-8th grades. Therefore, there was an increase in both the number of the course and in the class levels. Regulations were also made regarding the selection of elective courses in the new course schedule and it was stated that the 8-hour period in a certain day per week could be determined as elective course hours. Subsequently regulations were made related to the education program of the course. Although it was expected that most ICT teachers would be happy regarding this positive development; the single-day application of the elective courses and insufficient explanation regarding how to determine the days, class levels and student numbers of the elective courses caused ICT teachers to feel anger and anxiety. It even led to hopelessness in terms of solving problems due to continuous changes in some ICT teachers. Two ICT teachers expressed the situation as following:

"I was afraid this was coming, it seems like it increased to 2 hours in theory but this won't be possible in practice..." (M-40902)

"Friends, I'm no longer thinking of my dignity, my importance; they give us our lessons and I fulfill my 15 hours in my school it's enough for me... But I hnow they won't do this either. I'm in the 5th year of my professional life and I have already lost all my expectations, future plans and dreams..." (M-41807)

Decisions Taken in 2013 and Their Emotional Effects on ICT Teachers

Transformations in the emotions of ICT teachers draw attention in the discussions of 2013. Positive emotions of ICT teachers reach to their peak this year with the decisions taken. When considering decisions taken in 2013, the decision which affected ICT teachers the most is the one designating ICT course as compulsory instead of elective. ICT teachers who linked the problems they lived to the course being elective for years expressed their happiness by stating that the decision which they have been waiting for is finally taken. Additionally, together with designating the course as compulsory, its duration of 2 hours, the opportunity to assess the course with grades, increased opportunity to spend more time with students, the reduction of out-of-quota issue and additional course issue and the elmination of the obligation of accepting BTR assignments to fulfill course hours lead ICT teachers to feel happy and hopeful towards future. This situation is expressed by one ICT teacher as follows:

"Today I'm also very happy like everyone. We will be able to grade students and there will be times that we won't have out-of-quota problems. Once they see what students can do with the informatics course, they will provide us with new brand laboratories. MoNE which made this course compulsory knows this requirement." (M-65289)

Besides positive emotions, some ICT teachers expressed their anger, sadness, anxiety and fears by emphasizing work loads which increased with lessons and BTR assignments, students' attitudes and interests towards the course, technical problems in IT classes, challenges in classroom management, crowded classrooms and grading. Two ICT teachers expressed their negative emotions as the following in the discussion forum:

"There isn't any IT classroom in the school that I'm appointed to, and since we will share our building with another school there isn't enough space for an IT class. I didn't like the curriculum this year, I don't have any idea how this year will pass with a projector in class." (M-82352)

"I can not feel happy completely, I'm afraid someone will come up and say that the courses are elective again. I can not trust any more to MoNE after all those wrong decisions." (M-82590)

Apart from the ICT courses, problems continued to exist in 2013 such as; ICT classroom problems due to school transformations, interactive board installation accelerated by Fatih Project, problems regarding establishment of internet infrastructureand distribution of tablet computers, problems in ICT Guidance assignments and out-of-quota issues. Regarding the problems experienced, implementation differing from from one city to another even from one school to anotherbad planning in the process, increased duties and responsibilities and having difficulties in expressing their responsibilities to school head teachers increased the emotions of anger, boredom, regret, despair and burnout of ICT teachers towards MoNE. This situation is expressed by two ICT teachers as follows:

"As these dull managers cannot understand easily, it is especially stated in the BTR assignment paper that any other duties can't be assigned including guard duty but the directors still don't understand this. You should show the paper. With regard to what rule should I keep guard? I'm tired of explaining any issue to these people." (M-70030)

"I regret being BTR this year. I'm tired of this responsibility. I want to instruct as everyone does. I don't want to wander around with a screwdriver in my hands, I don't want to go home every night with dust and dirt on me. I feel my energy is exhausted. How do you feel on this?" (M-70118)

Decisions Taken in 2014 and 2015 and Their Emotional Effects on ICT Teachers

Rapid increase in negative feelings is observed again in 2014 and 2015. This situation shows that the positive developments which affected ICT teachers turned to a more negative atmosphere with the decisions takein in 2014. The most discussed issues were Fatih project, norm issues, school transformations and BTR assignments in 2014 and 2015. Particularly discussions about BTR assignments were intensely observed in 2014. Problems arising from assignments, assignment durations, guard duties and dispersed course schedules in educatonal institutions performing dual education are eye-catching in this period. Sadness and boredom increased in ICT teachers who are still considered as technical staff. Additionally, one of the points emphasized in the discussion they made in these years regarding BTR assignment is that ICT teachers stated their regrets for choosing this profession because of the difficulties experienced. This situation is expressed by an ICT teacher as follows:

"It is impossible not to agree in certain points. I got accepted in 2002 with 198 score, the base point of our department was then higher than that of the primary mathematics education department. We were ignorant then, we couldn't understand, if I had the chance to go back in time I would never choose this branch." (M-280825)

In the discussions in 2015 regarding this issue, ICT teachers who want to feel connected to a place would like all these uncertainities to be solved no matter how. These teachers who feel like nomads and who state that they experience commitment issues with the school because of temporary assignments, expressed their anxiety even more intensely in 2015 by emphasizing constantly changing education system per ministers and lack of educational politicies. Two ICT teachers expressed this as following:

"What was wrong with the 5+3 system in our times so that we played with this system like a jigsaw? They made a big mistake by applying 4+4+4, they can't correct it now, they are thinking about applying 4+1+3+4. We don't have any state policy, any government policy, I was considering that we have minister policy. Now this doesn't exist either. We have annual policies in education now." (M-210564)

"Whatever happens happens to us. Again, I regret to have chosen this profession... Let they shut it down completely, and send us to a different place and we won't have any future anxiety." (M-210589)

Studies regarding Fatih project also increased in 2014 and 2015. The installation of interactive boards and internet infrastructure, distribution of tablet computers, development of EBA (Education Informatics Network) and teachers' training accelerated considerably in this period. ICT teachers reflected mostly anger, sadness, boredom and insurgence in the face of distribution, installation, access, planing problems; usage, content, qualification, cooperation and function problems; technical support, knowledge and skill and official paper deficiency, increasing work load with the compulsory commission duties experienced especially in the process. Two ICT teachers expressed this as following:

"No formatting, no virus removal, no website designing, no handling with network wires and equipments, there isn't this and that. I'm bored of theese sentencea. Who cleans a virus infected smartboard? Me. Who updates the website of the school?. Who is called when a printer or a photocopier is broken?. They are suggesting us that we should call the authorized service. Try it once, how much money will they ask for, or when will they give you an appointment? I'm bored of rushing all these works, enough is enough!" (M-148320)

"Isn't it a little late for this!!! IT should have been prepared before the distribution of first tablets. The first tablets were wasted. Most of the schools didn't record these tifs, transferred students and assigned teachers didn't know what to do thus they were all wasted. It's all over now!" (M-187570)

In addition to all negativities, ICT teachers are quite affected by the decision taken in 2014 regarding the determination of norms without requiring any time period. They expressed burnout situation due to the experienced problems while they were feeling invaluable for being out-of-quota any time with the new regulation. Two ICT teachers expressed this as following:

"Every year is a toy in the management's hands. Will I have class every year? In my opinion, they should terminate everything related to informatics, and this page as well. Let them make us foresters, let us dibble. People don't understand us. Maybe plants and insects do. What a shame on those wasting this generation!" (M-235496)

"Last year my cadre was in a high school, due to course being elective I was assigned to secondary school. I will be out-of-quota again in this school if 7th grades don't select the course. I started to consider myself as redundant in the earth." (M-235522)

Findings Obtained from Interviews Made with ICT Teachers

In the interviews made in order to determine the expectations of ICT teachers from MoNE and to analyze the effects of MoNE decisions on ICT teachers' emotions in detail, it is determined that ICT teachers experience various emotions. It is observed that ICT teachers feel anger (N=27), sadness (N=25) and boredom (N=23) the most among negative feelings and only happiness (N=26) among positive feelings. Apart from these, distrust (N=12), insurgence (N=12), desperation (N=10), burnout (N=9) and fear (N=9), jealousy (N=6), hopelessness (N=6) are among the feelings expressed by ICT teachers. It is obvious that these findings obtained from the interviews show similarities with those obtained from the discussion forum.

ICT teachers link their negative emotions with the lack of a regular and systematic policy of MoNE regarding their fields (N=10) and with duties and responsibilities they are given by MoNE (N=8). Two ICT teachers expressed the negative effects of MoNE decisions on their feelings as follows:

"I feel desperate and I became alienated from my profession due to MoNE's decisions. I was thinking of being promoted in my profession, even obtaining a doctorate degree. However, when

I came back from military service I saw that the lessons were removed, I couldn't see a future for me and I was alienated from my profession. I'm burnout, I don't even want to perform this profession. In the first years, I was ambitious in my career but now all is gone. I'm studying pharmaceutics on one hand now. I believe I will graduate. There are a lot of people eager to do something else around me. (2-E)"

"You cannot find a solution when considering the future… I feel hopeless and anxious about the future. MoNE was going to assign me as a regular civil servant. We are still in a process like this but we don't know anything about it. We have always anxiety. My hope is decreasing day by day after the developments in education system besides problems in our subject. I don't want to be completely hopeless... (14-E)"

In the interviews, the expectations of ICT teachers from MoNE are analyzed to eliminate negative emotions. Teachers expressed their expectations under the dimensions of decisions and applications taken, technical infrastructure, ICT course and projects. While almost half of ICT teachers (N=14) demand that uncertainties and problems of MoNE decisions be solved, there are also plenty of teachers who would likte to see the same value, regularity and respect just like other teachers experience by putting an end to the negative attitude of MoNE towards themselves (N=8) and who claim clarifications on their job definitions (N=10). According to these teachers, if the importance of ICT education is not noticed, problems will continue to exist. Two ICT teachers expressed this situation as following:

"Maybe not next year but for the future, there should be an explanation of what will happen to us. We need to wipe out the concern of whether the course will be cancelled or not. Our course is not included in the examination, painting and music classes won't be cancelled in the future but I do have this anxiety about my course. Whether it will be combined with technology design or not? Or will it be totally removed from the education system? One has to answer these questions above all. There is a need for resolution." (9-E)

"For instance, school counselors can't attend to vacant classes, this point is explicitly stated. However, this is not the case for us. These issues should be resolved with a regulation. A regulation which can be understood clearly by everyone. (6-E)"

On the other hand, other expectations from MoNE are as follows: stability in MoNE decisions (N=5), raising awareness of parents regarding ICT course (N=2) and collaborative studies (N=1). In addition to this, the following issues are also stated by teachers: the continuation of the course being compulsory (N=7), rearrangement of the education program (N=6), value given to the course (N=6), existence of a course book (N=4), new courses related to informatics (N=2), renovation of ICT classrooms (N=10), improvement of technical infrastructure in schools (N=6) and solution to problem of fixed quota of ICT teachers (N=5). Two ICT teachers expressed this situation as following:

"There should be a decent curriculum. The situation of the course will not change, there should be a standard course hour and job definition. And of course, the provision of equipment. This is a need. (28-K)"

"Additional software courses can be applied. Those who wish can select our course and those who are interested in software can be trained at early ages. This will revive our field. There can be even hardware courses. This field can become an important one then. Individuals would be able to learn what they're interested in during their early ages. We receive news abroad that children of 6th and 7th grades are software experts already. Why not in Turkey? These applications would be very useful. (29-E)"

Interpretations, Conclusion and Suggestions

In order to reach success targeted by changes and to eliminate problems experienced in the change process, the emotions of teachers who are applying this process and the reasons behind these emotions should be analyzed. Because, emotions have important effects on professional developments of teachers, their continuation of the profession, learning process of students and the efficient and productive realization of educational changes. (Lee & Yin, 2011; März & Kelchtermans, 2013; Nias, 1996; Van Veen & Lasky, 2005; Zembylas, 2010).

It is determined in the study that changes brought particularly by Fatih Project, course hours, evaluation of the course, assignments of coordinator teachers and ICT Guidance, assignments and displacements, ICT classrooms and out-of-quota problems affect ICT teachers emotionally. It is observed that these regulations made by MoNE cause mostly anger, sadness, boredom, desperation and insurgence emotions in ICT teachers. In addition to these emotions, disappointment, despair and burnout also increased with the recent decisions. On the other hand, positive emotions were not reflected too much within years, but happiness was reflected in the discussions during the period in which the decision rendering the ICT course compulsory was taken.

When analyzing the reasons for ICT teachers to feel negative emotions; especially the structure of the decisions taken by MoNE, the way they are taken and applied and their evaluation are problematic. Both in online discussions and in interviews, the following reasons of negative emotions are observed: continuous sudden and uncertain decision making of MoNE, insufficient interaction and cooperation with partners who experience the problem, unawareness of decision makers about the fundamental reasons of problems, lack of analysis of reasons of the problems in detail, unawareness of ICT teachers about the process, letting open-ended statements in the decisions taken, lack of evaluation of the problems and the effects of change in detail. Additionally, when considering changes, the facts that oral and written language is not understood in the same way by everyone and the statements are open-ended also cause problems in this process. Many research studies in the literature reveal that teachers also feel negative emotions due to their alienation towards change process, the fact that they do not have the right to speak and the communication and cooperation problems experienced in countries such as USA, England, Canada, Australia. (Davis, 2003; Hargreaves, 1998, 2005; Lee & Yin, 2011; Schmidt & Datnow, 2005).

On the other hand, it is observed that there are other reasons of feeling negatively in change process besides the decisions taken by MoNE and the problems experienced in the application process of these decisions. Particularly, the roles and duties which ICT teachers are obliged to undertake have an important effect on negative emotions. It is also stated in many studies in the literature that teachers have difficulties under heavy work loads, suppressions and uncertainities and as a result of this they reflect negative emotions such as anger, sadness, anxiety, fear and burnout (Kelchterman, 2005; Nias, 1996; Timoštšuk & Ugaste, 2010). It is determined that together with the problems related to duties and responsibilities, ICT teachers cannot see the teaching value of their profession and they lost this value over time, as they question their their professional identities with the questions like "who am I, what do I do". When teachers feel themselves weak and hopeless, incompetent, when their trust on their ability of adding meaning to the lives of students decrease, when they are overwhelmed by the workload and when they are not able to manage the teaching processes, no matter how strong and good the changes and reforms are, it is impossible to reach success in the process. According to Hargreaves (2005) and Day (2002), if teachers perceive the educational value of their profession, they will be willing to continue in the process regarding the education and development of students even if they are exposed to pressure. However, the process has developed quite different for ICT teachers. In the first years, ICT teachers who tried to seek their rights with anger and insurgence emotions began to withdraw themselves in the face of unsolved problems and instead of seeking their rights efficiently, they experienced boredom, hopelessness, desperation, disappointment and burnout as they felt themselves invaluable in professional terms. According to the Russell's (1980) Circumplex Model of Affect, this transformation in feelings indicates that in case of dissatisfied situations, emotions begin to transform

from stimulation status into drowsiness (self-closing) status. However this is not the preferred situation, because sleepiness is the indication of professional despair and burnout of teachers.

In addition to all experienced above, within the context of school where change process takes place, while the emotional link between teachers and students constitute the impetus to their awareness of their developments, continuation of profession with pleasure and happiness (Darby, 2008; Day & Gu, 2009; Zembylas, 2005); it is obvious that ICT teachers are deprived of this situation. It is determined in the study that majority of ICT teachers has difficulties in communication, guidance and support from school management. It is revealed that they experience sadness, desperation and disappointment due to the reasons that other colleagues and school management do not attribute value to their field (branch), they do not consider them as teachers and their non-educational expectations and demands from ICT teachers. Moreover, ICT teachers who could not communicate well with students due to the facts that their course is elective for years and insufficient course hours assigned struggled for years to experience positive feelings in the education system and feel themselves as teachers. The jealousy they feel against other branch teachers is revealed at this point. This struggle didn't lead to a permanent happiness in ICT teachers although teachers expressed happiness after their course was recognized as compulsory.

According to the data obtained in the study, when taking into account the feelings of ICT teachers and transformation in these feelings, it seems necessary that decision makers should work on certain regulations. Otherwise, the disconnection of ICT teachers from the system, their hopelessness and their unproductive, unwilling and completely burnout situations seem to be inevitable. At this point of view, it is considered that decision makers and researchers of teacher education process have important responsibilities.

First of all, decision makers need to take actions by considering that psychological factors affect the decision-making process of teachers and that this situation affects the successful application of reforms. Considering the effect of change and political power on teachers, it is fundamental to analyse the emotions of ICT teachers who occupy the key point of applying change in schools, in both planning process and application process. On the other hand, decision makers need to explain the existing system more clearly and to take planned and cooperative actions by determining the problems and solutions with partners. Because the cooperation of decision makers with teachers can minimise uncertainities and conflicts; a healthier change process will be experienced with the help of feedbacks. ICT teachers also agree with this statement by indicating that MoNE shall take actions in a more planned, systematic and cooperative way. The link formed in a cooperative environment will help ICT teachers to feel safe and by means of this environment, ICT teachers will restrain from negative feelings even in case of negative situations and this trust can lead teachers to take risks in the environment of uncertainities (Darby, 2008; Lee & Yin, 2011). According to Cohen (2010), teacher education process has an important place in terms of emotions in the change process. Numerous studies in the literature emphasize on the teacher education as a process in which teachers explore their educational roles, gain knowledge about learning process, structure their professional identities and regulate their feelings by gaining awareness regarding themselves and applications (Bloomfield, 2010; Cowie, 2011; Cross & Hong, 2012; Darby, 2008; Lamote & Engels, 2010; Timoštšuk & Ugaste, 2010; Trede, Macklin, & Bridgesa, 2012). Therefore,various applications can be implemented in order to provide emotional support to ICT teachers in teacher education process. For instance, platforms can be formed at which decisions and applications of MoNE regarding ITs are discussed, duties and responsibilities of ICT teachers are shared and the school realities and educational experiences are reflected. On the other side, meetings and seminars can be held in which problems, emotions and suggestions of assigned teachers are expressed and the providing ICT teachers with more detailed information can be realized with the help of school experience and teacher internship courses. Thus, because ICT teachers will be aware of the process and their feelings when they start their professional lives, they will be able to manage the process more successfully. It should not be forgotten that teachers need support not only in their education process but also in their professional experiences (Avraamidou, 2014). It is possible to reach better achievements

with regard to the professional development of teachers in processes where applications, reflections and obstacles are discussed and positive examples are introduced. At this point, ICT teachers can behave more organisationally to continue their professions effectively by acting more solution-oriented against the problems they experinced. Considering good examples and solutions with these formations, teachers can work in unity and solidarity by realizing the value of their field and find solutions to the problems, instead of thinking negatively and focusing on problems.

In this study, when analysing the future expectations of ICT teachers, it is observed that all suggestions are based on the desire to fulfill their professions in a more esteemed, valuable and trouble-free way and that they desire to feel themselves as teacher after all. If necessary measures are not taken and if support is not provided, negative emotions of ICT teachers will continue to constitute a major impediment to their successful and productive continuation of their professions.

References

Altun, E., & Ateş, A. (2008). Bilgisayar ve öğretim teknolojileri öğretmen adaylarının sorunları ve geleceğe yönelik kaygıları. *İlköğretim Online*, 7(3), 680-692.

Avraamidou, L. (2014). Studying science teacher identity: Current insights and future research directions. *Studies in Science Education*, *50*(2), 145-179.

Bloomfield, D. (2010). Emotions and 'getting by': A pre-service teacher navigating professional experience. *Asia-Pacific Journal of Teacher Education*, *38*(3), 221-234.

Chen, J. (2016). Understanding teacher emotions: The development of a teacher emotion inventory. *Teaching and Teacher Education*, *55*(4), 68-77.

Cohen, J. L. (2010). Getting recognised: Teachers negotiating professional identities as learners through talk. *Teaching and Teacher Education*, *26*(3), 473-481.

Cowie, N. (2011). Emotions that experienced English as a foreign language (EFL) teachers feel about their students, their colleagues and their work. *Teaching and Teacher Education*, *27*(1), 235-242.

Cross, D. I., & Hong, J. Y. (2012). An ecological examination of teachers' emotions in the school context. *Teaching and Teacher Education*, *28*(7), 957-967.

Darby, A. (2008). Teachers' emotions in the reconstruction of professional self-understanding. *Teaching and Teacher Education*, *24*(5), 1160-1172.

Davis, K. S. (2003). "Change is hard": What science teachers are telling us about reform and teacher learning of innovative practices. *Science Education*, *87*(1), 3-30.

Day, C. (2002). School reform and transitions in teacher professionalism and identity. *International Journal of Educational Research*, *37*(2), 677-692.

Day, C., & Gu, Q. (2009). Teacher emotions: Well being and effectiveness. In P. A. Schutz & M. Zembylas (Eds.), *Advances in teacher emotion research: The impact on teachers' lives* (pp. 15-32). New York: Springer.

Day, C., Elliot, B., & Kington, A. (2005). Reform, standards and teacher identity: Challenges of sustaining commitment. *Teaching and Teacher Education*, *21*(5), 563-577.

Deryakulu, D. (2005). Bilgisayar öğretmenlerinin tükenmişlik düzeylerinin incelenmesi. *Eğitim Araştırmaları*, *19*, 35-53.

Deryakulu, D., & Olkun, S. (2007). Analysis of computer teachers' online discussion forum messages about their occupational problems. *Educational Technology & Society*, *10*(4), 131-142.

Ekici, S., & Yılmaz, B. (2013). FATİH Projesi üzerine bir değerlendirme. *Türk Kütüphaneciliği*, *27*(2), 317-339.

Eren, E., & Uluuysal, B. (2012). Bilişim teknolojileri (BT) öğretmenlerinin mesleki sorunları ve çözüm önerileri. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, *8*(3), 152-171.

Frenzel, A. C., Pekrun, R., Goetz, T., Daniels, L. M., Durksen, T. L., Becker-Kurz, B., & Klassen, R. M. (2016). Measuring Teachers' enjoyment, anger, and anxiety: The teacher emotions scales (TES). *Contemporary Educational Psychology*, *46*, 148-163.

Fullan, M. G. (1991). *The new meaning of educational change*. London: Cassell.

Fullan, M. G. (1993). *Change forces: Probing the depths of educational reform*. New York: Falmer.

Fullan, M. G., & Miles, M. B. (1992). Getting reform right: What works and what doesn't. *Phi Delta Kappan*, *73*, 745-752.

Fuller, C., Goodwyn, A., & Francis-Brophy, E. (2013). Advanced skills teachers: Professional identity and status. *Teachers and Teaching: Theory and Practice*, *19*(4), 463-474.

Hargreaves, A. (1998a). The emotional politics of teaching and teacher development: With implicatinos for educational leadership. *International Journal of Leadership in Education*, *1*(4), 315-336.

Hargreaves, A. (1998b). The emotional practice of teaching. *Teaching and Teacher Education*, *14*(8), 835-854.

Hargreaves, A. (2000). Mixed emotions: Teachers' perceptions of their interactions with students. *Teaching and Teacher Education*, *16*(8), 811-826.

Hargreaves, A. (2001). Emotional geographies of teaching. *The Teachers College Record*, *103*(6), 1056-1080.

Hargreaves, A. (2005). Educational change takes ages: Life, career and generational factors in teachers' emotional responses to educational change. *Teaching and Teacher Education*, *21*(8), 967-983.

Hebert, E., & Worthy, T. (2001). Does the first year of teaching have to be a bad one? A case study of success. *Teaching and Teacher Education*, *17*(8), 897-911.

Hodgen, J., & Askew, M. (2007). Emotion, identity and teacher learning: Becoming a primary mathematics teacher. *Oxford Review of Education*, *33*(4), 469-487.

Hong, J. Y. (2010). Pre-service and beginning teachers' professional identity and its relation to dropping out of the profession. *Teaching and Teacher Education*, *26*(8), 1530-1543.

Jiang, J., Vauras, M., Volet, S., & Wang, Y. (2016). Teachers' emotions and emotion regulation strategies: Self-and students' perceptions. *Teaching and Teacher Education*, *54*, 22-31.

Kagan, D. M. (1992). Professional growth among preservice and beginning teachers. *Review of Educational Research*, *62*(2), 129-169.

Karal, H., & Timuçin, E. (2010). Bilgisayar ve öğretim teknolojileri öğretmenliği bölümleri mezunların sorunları ve çözüm önerileri. Panel raporu. *Kuram ve Uygulamada Eğitim Yönetimi*, *16*(2), 277-299.

Kelchtermans, G. (1993). Getting the story, understanding the lives: From career stories to seachers' professional development. *Teaching and Teacher Education*, *9*(5-6), 443-456.

Kelchtermans, G. (2005). Teachers' emotions in educational reforms: Self-understanding, vulnerable commitment and micropolitical literacy. *Teaching and Teacher Education*, *21*(8), 995-1006.

Kelchtermans, G., Ballet, K., & Piot, L. (2009). Surviving diversity in times of performativity: Understanding teachers' emotional experience of change. In P. Schutz & M. Zembylas (Eds.), *Advances in teacher emotion research: The impact on teachers' lives* (pp. 215-232). New York: Springer.

Lamote, C., & Engels, N. (2010). The development of student teachers' professional identity. *European Journal of Teacher Education*, *33*(1), 3-18.

Lee, J. C. K., & Yin, H. B. (2011). Teachers' emotions and professional identity in curriculum reform: A Chinese perspective. *Journal of Educational Change*, *21*(1), 25-46.

Linnenbrink, E. A. (2006). Emotion research in education: Theoretical and methodological perspectives on the integration of affect, motivation, and cognition. *Educational Psychology Review*, *18*(4), 307-314.

März, V., & Kelchtermans, G. (2013). Sense-making and structure in teachers' reception of educational reform: A case study on statistics in the mathematics curriculum. *Teaching and Teacher Education*, *29*(1), 13-24.

Nias, J. (1996). Thinking about feeling: The emotions in teaching. *Cambridge Journal of Education*, *26*(3), 293-306.

Olson, J. (2002). Systemic change/teacher tradition: Legends of reform continue. *Journal of Curriculum Studies*, *34*(2), 129-137.

Reio, T. G. (2005). Emotions as a lens to explore teacher identity and change: A commentary. *Teaching and Teacher Education*, *21*(8), 985-993.

Russell, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, *39*, 1161-1178.

Scherer, K. R. (2001). Appraisal considered as a process of multilevel sequential checking. In K. R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotion: Theory, methods, research* (pp. 92-120). New York and Oxford: Oxford University Press.

Schmidt, M., & Datnow, A. (2005). Teachers' sense-making about comprehensive school reform: The influence of emotions. *Teaching and Teacher Education*, *21*(8), 949-965.

Schutz, P. A., Hong, J. Y., Cross, D. I., & Osbon, J. N. (2006). Reflections on investigating emotion in educational activity settings. *Educational Psychology Review*, *18*(4), 343-360.

Sutton, R. E., & Wheatley, K. F. (2003). Teachers' emotions and teaching: A review of the literature and directions for future research. *Educational Psychology Review*, *15*(4), 327-358.

Şahin, İ. (2007). Türkiye eğitim sisteminde değişim. *Eğitim, Bilim, Toplum*, *5*(20), 30-54.

Şanlı, Ö., Altun, M., & Tan, Ç. (2015). Öğretmenlerin akıllı tahta ve öğrencilere dağıtılan tablet bilgisayarlar ile ilgili yaşadıkları sorunlar ve çözüm önerileri. *Electronic Turkish Studies*, *10*(3), 833-850.

Şerefoğlu Henkoğlu, H., & Yıldırım, S. (2012). Türkiye'deki ilköğretim okullarında bilgisayar eğitimi: Kuram ve uygulamadaki farklılıklar. *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, *45*(1), 23-61.

Taxer, J. L., & Frenzel, A. C. (2015). Facets of teachers' emotional lives: A quantitative investigation of teachers' genuine, faked, and hidden emotions. *Teaching and Teacher Education*, *49*, 78-88.

Timoštšuk, I., & Ugaste, A. (2010). Student teachers' professional identity. *Teaching and Teacher Education*, *26*(8), 1563-1570.

Topu, F. B., & Göktaş, Y. (2012). Bilişim teknolojileri öğretmenlerinin üstlendikleri roller ve onlardan beklentiler. *Kuram ve Uygulamada Eğitim Bilimleri*, *12*(1), 461-478.

Trede, F., Macklin, R., & Bridgesa, D. (2012). Professional identity development: A review of the higher educational literature. *Studies in Higher Education*, *37*(3), 365-384.

Trigwell, K. (2012). Relations between teachers' emotions in teaching and their approaches to teaching in higher education. *Instructional Science, 40*(3), 607-621.

Tsang, K. K., & Kwong, T. L. (2016). Teachers' emotions in the context of education reform: labor process theory and social constructionism. *British Journal of Sociology of Education*, 1-12.

Turkish Language Association. (2015). Büyük türkçe sözlük. Retrieved September 15, 2015, from tarihinde http://www.tdk.gov.tr/index.php?option=com_BTs&view=BTs

Van den Berg, R. (2002). Teachers' meanings regarding educational practice. *Review of Educational Research*, *72*(4), 577-625.

Van Veen, K., & Lasky, S. (2005). Emotions as a lens to explore teacher identity and change: Different theoretical approaches. *Teaching and Teacher Education*, *21*(8), 895-898.

Van Veen, K., & Sleegers, P. (2006). How does it feel? Teachers' emotions in a context of change. *Journal of Curriculum Studies*, *38*(1), 85-111.

Van Veen, K., & Sleegers, P. (2009). Teachers' emotions in a context of reforms: To a deeper understanding of teachers and reforms. In P. A. Schutz & M. Zembylas (Eds.), *Advances in teacher emotion research: The impact on teachers' lives* (pp. 233-251). New York: Springer.

Van Veen, K., Sleegers, P., & Van de Ven, P. (2005). One teacher's identity, emotions, and commitment to change: A case study into the cognitive–affective processes of a secondary school teacher in the context of reforms. *Teaching and Teacher Education*, *21*(8), 917-934.

Watson, D., & Clark, L. A. (1994). Emotions, moods, traits, and temperaments: Conceptual distinctions and empirical findings. P. Ekman ve R.J. Davidson (Ed). *The nature of emotion: Fundamental questions* içinde (s. 400-405). New York: Oxford University Press.

Yeşiltepe, G. M., & Erdoğan, M. (2013). İlköğretim bilişim teknolojileri öğretmenlerinin mesleğe yönelik sorunları, bu sorunların nedenleri ve çözüm önerileri. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi*, *33*(3), 495-530.

Zembylas, M. (2003). Caring for teacher emotion: Reflections on teacher self development. *Studies in Philosophy and Education*, *22*(2), 103-125.

Zembylas, M. (2004). The emotional characteristics of teaching: An ethnographic study of one teacher. *Teaching and Teacher Education*, *20*(2), 185-201.

Zembylas, M. (2005). Discursive practices, genealogies and emotional rules: A post-structuralist view on emotion and identity in teaching. *Teaching and Teacher Education*, *21*(8), 935-948.

Zembylas, M. (2006). Challenges and possibilities in a postmodern culture of emotions in education. *Interchange*, *37*(3), 251-275.

Zembylas, M. (2010). Teacher emotions in the context of educational reforms. In A. Hargreaves, M. Fullan, A. Lieberman, & D. Hopkins (Eds.), *In second international handbook of educational change* (pp. 221-236). Netherlands: Springer.

Zembylas, M., & Schutz, P. A. (2009). Research on teachers' emotions in education: Findings, practical implications and future agenda. In P. A. Schutz & M. Zembylas (Eds.), *Advances in teacher emotion research: The impact on teachers' lives* (pp. 367-377). New York: Springer.

Zembylas, M., Charalambous, C., Charalambous, P., & Kendeou, P. (2011). Promoting peaceful coexistence in conflict-ridden Cyprus: Teachers' difficulties and emotions towards a new policy initiative. *Teaching and Teacher Education*, *27*(2), 332-341.