TURKISH K12 TEACHERS' INTENTIONS TOWARD NEW COMMUNICATIONAL TECHNOLOGIES: BUILDING AN EFFECTIVE TECHNOLOGY PLAN VIA THE THEORY OF PLANNED BEHAVIOR

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ABSTRACT

The main purpose of this qualitative research is to find out Turkish K12 teachers' intentions toward New Communication Technologies (NCTs) that they redesign and revolutionize their new roles in these new interactive milieus carefully. In this study, the K12 teachers' intentions are indications of their readiness and immediate antecedent of behaviors to utilize NCTs in the classrooms. Therefore, the Theory of Planned Behavior (TpB) is chosen to expose their intentions toward these cutting-edge technologies. Based on the main purpose of the research, there are three main research concerns: 1) the Behavioral Beliefs of Turkish K12 teachers toward NCTs; 2) the Normative Beliefs of Turkish K12 teachers toward NCTs, and 3) the Control Beliefs of Turkish K12 teachers toward NCTs?

INTRODUCTION

Today's Turkish K12 schools have invested heavily New Communication Technologies (NCTs), which are playing important roles in generating interactive communication networks among them. Not only do these NCTs provide the highest quality interactions for the K12 teachers and continually meeting the needs of their community, but also represent novel and effective tools to help advance sustainable school education (K12) development. Besides, these technologies have powerful potentials to develop responsible citizens who communicate effectively, think critically, recognize the rights and contributions of others and become independent lifelong learners (Bonk, 1998).

The mission of Turkish K12 teachers insure that all students have the necessary communicational skills to be prepared for a variety of post-secondary opportunities; such as jobs, vocational schools, colleges or universities. Therefore, to build goals and objectives for NCTs, the K12 teachers must improve their teaching strategies and principles according to a technology plan that directs all communicational activities and decision making processes powerfully. This must be a concise and specific presentation of usable information for NCTs by focusing on a powerful vision of the future. An effective technology plan can provide Turkish K12 teachers with the time and freedom to restructure their curriculum around NCTs. Besides, this plan can improve not only school-community communications, but also student performances on empowering interactive communications. To enhance the collaboration skills of the K12 teachers via this plan, they can utilize all available NCTs to increase the amount of engaged teaching performances and the levels of communication skills. On the other side, the Turkish government spent billion dollars to integrate NCTs into curriculums via effective technology plans; but these technologies are being used in the K12 classrooms very minimally (MEB, 2004).

Although the integration of NCTs into classroom is viewed as one of effective teaching strategy for improving

teachers' communicational skills, most of the K12 teachers have rarely favorable intentions toward the effectiveness of NCTs in their classes (MEB, 2004). Aizen (2005) emphasizes that these intentions are indications of their readiness to perform a given behavior. Therefore, the K12 teachers' intentions toward NCTs show their attitudes toward the *behaviors*, *subjective norms*, and *perceived behavioral controls* of NCTs that each predictor is weighted for its importance in relation to the behavior and population of interest (Petty and Cacioppo, 1996; Aizen, 2005; Value Based Management.net, 2005).

The K12 teachers' intentions toward NCTs can influence their abilities to utilize these technologies in their classes. While some are bombarded promises of tomorrow's NCTs, these teachers are also struggling to make efficient and effective use of today's ones due to their thoughts about teaching with NCTs. This is important for Turkish K12 teachers to feel comfortable with being able to use all types of NCTs in their daily educational activities; because their intentions toward communicational innovations can significantly change curriculum, subject matters and course contents as well as communicational milieus. These teachers' intentions, consequently, must be improved positively toward the use of NCTs. If the K12 teachers are indeed to embrace NCTs, they can make them a part of their teaching cultures. Therefore, the major purpose of this study is to find out the Turkish K12 teachers' intentions toward NCTs. Besides, this qualitative research is to determine how an effective technology plan can help the K12 teachers to change their negative intentions toward NCTs to positive ones that they can use these novel technologies more than they utilize before.

Theoretical Background of the Study

This research tries to find out and analyze the Turkish K12 teachers' intentions toward NCTs that they redesign and revolutionize their new roles in these new communication environments carefully. In this study, teachers' intentions are indications of their readiness and immediate antecedent of behaviors to utilize NCTs in the classrooms. Besides, these intentions are based on their attitudes toward the behaviors, subjective norms and perceived behavioral controls with each predictor weighted for its importance in relation to their behaviors and population of interests (Aizen, 1985; Aizen, 1991. Aizen, 2002; Aizen, 2005). In this case, their intensions are their aims that guide their actions. Besides, the K12 teachers consider a behavior intentional when it appears purposeful or done intentionally based on reasons (beliefs, desires, etc.) and performed with skill and awareness (Malle, Moses and Baldwin, 2001). In short, the K12 teachers' Intentions can direct all their forces of the awareness of NCTs.

The *Theory of Planned Behavior (TpB)* is chosen to expose the K12 teachers' intentions toward the cutting-edge technologies. This theory highlights that human action is guided by three kinds of considerations (Aizen, 1985; Aizen, 1991; Aizen, 2002; Aizen, 2005; Value Based Management.net, 2005):

1. Behavioral Beliefs (beliefs about the likely consequences of the behavior) produce positive or negative attitudes toward the behavior,
2. Normative Beliefs (beliefs about the normative expectations of others) result in perceived social pressure or subjective norms, and
3. Control Beliefs (beliefs about the presence of factors that may facilitate or impede performance of the behavior) rise to perceived behavioral controls.

According to Ajzen (2005), *Behavioral Beliefs* as the subjective probability link the behavior of interest to expected outcomes that the behavior will produce a

given outcome. Therefore, an individual can hold many behavioral beliefs with respect to any behavior. These accessible beliefs are in combination with the subjective values of the expected outcomes that determine the prevailing attitude toward the behavior. *Normative Beliefs* refer to the perceived behavioral expectations of such important referent individuals or groups (such as the person's spouse, family, friends, supervisor, coworkers, etc.). These beliefs are in combination with the person's motivation to comply with the different referents. *Control Beliefs* have to do with the perceived presence of factors that may facilitate or impede performance of a behavior. They are in combination with the perceived power of each control factor, which determines the prevailing perceived behavioral control. To sum up, as shown Figure 1, the general rule is that the more positive the attitude and subjective norm and the greater the perceived control, the stronger must be the person's intention to perform the behavior in question (Petty and Cacioppo, 1996; Aizen, 2005; Value Based Management.net, 2005).

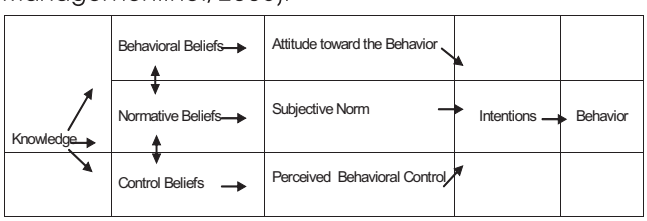

Figure 1. The Relationships among *Behavioral, Normative* and *Control* Beliefs(Adapted from the TpB of Aizen, 2005)

Therefore, in this study, the TpB helps the researcher to predict Turkish K12 teachers' intentions toward NCTs, and also to explain how an effective technology plan changes these teachers' intentions toward NCTs positively.

Purposes

Defining Turkish K12 teachers' intentions toward NCTs trough building an effective technology plan reduces the limitations and pitfalls of interactive communications. However, a continuous inquiry into the K12 teachers' intentions toward these progressive technologies has yet to be undertaken deeply (Wiburg, 1997; Koszalka, 2001). This paper, therefore, make a unique contribution to Turkish K12 teachers' intentions toward NCTs by providing a comprehensive overview on this investigation. Besides, this study discusses that building an effective technology plan is how to help these teachers develop productive intentions and how these intentions can be addressed with various methodologies to involve the interactive communicational dimensions of NCTs in school education. Besides, the K12 teachers' productive intentions toward NCTs are vital for students to be engaged citizens, informed individuals and dynamic members of their society. Therefore, students having different communication styles and strategies can improve their critical thinking skills by involving lifelong learning experiences.

Based on the main purpose of this research and the concerns discussed above, there are three key research inquiries in this study:

1. What are the *Behavioral Beliefs* of Turkish K12 teachers toward NCTs?
   a. What are the K12 teachers' positive attitudes toward NCTs?
   b. What are the K12 teachers' negative attitudes toward NCTs?
2. What are the *Normative Beliefs* of Turkish K12 teachers toward NCTs?
   a. What are the positive perceived social pressures that the K12 teachers use or do not use NCTs in their classes?
   b. What are the negative perceived social pressures that the K12 teachers use or do not use NCTs in their c lasses?

3. What are the *Control Beliefs* of Turkish K12 teachers toward NCTs?
   a. What are the K12 teachers' positive perceptions of their ability to use or not use NCTs in their classes? their ability to use or not use NCTs in their classes?
   b. What are the K12 teachers' negative perceptions of their ability to use or not use NCTs in their classes?

Methods

This is a qualitative case study project, which aims to investigate Turkish K12 teachers' intentions toward NCTs, and to argue multi-way solutions to build an effective technology in their classes. For these reasons, this research utilizes qualitative data to provide detailed information to the researcher for the data collection. Moreover, this method helps the author to generate new perspectives and stimulate new directions in the data analysis.

In this research, the case study was chosen as an appropriate qualitative research method for a couple reasons. First, this study was exploratory in order to allow insights to emerge from a recursive data analysis process. The variables in the site of the research were highly complex and extensive. Additionally, the research data were very dependent on context and needed to be collected in its natural environment with no controls and manipulations. As an *interpretive multi-method* approach, the qualitative methodology allowed the researcher to use inductive logic, designing categories, themes and patterns without control and manipulation in the natural research setting (Patton, 1990; Bogdan and Biklen, 1992; Maxwell, 1996). Additionally, this case examined the phenomena in depth in its natural context by focusing on a specific case. Therefore, the researcher can overcome the natural prejudices.

Research Setting and Participants

This research was conducted during the 2003-2004 school-year in Eskisehir, Turkey. The findings of this study represent the 319 teachers (241 women and 78 men) who work at the K12 schools in the downtown of Eskisehir. They were asked individually to read and sign the informed consents form, which described the research in detail. Therefore, these teachers participated voluntarily in this research. The comprehensive information about the participants' demographic characteristics is given the *Data Sources* section.

Data Sources

To find out Turkish K12 teachers' intentions toward New Communication Technologies (NCTs), a questionnaire was designed based on the Theory of Planned Behavior (TpB) by the researcher. This questionnaire had two main sections:

1. The first section was aimed to collect Turkish K12 teachers' demographic characteristics, and had the 5 structured questions, and
2. The second section had three sub-sections,which each of them had the three open-ended questions to investigate the K12 teachers' intentions toward NCTs in their classes. All open-ended questions in these sub-sections were semi-structured.

In the first section, the demographic questions were not the focus of this research, so that they were just presented the personal data of the participants in this study. The K12 teachers were asked these five demographic questions regarding the role of NCTs in their experiences with their schools:

1. Please identify your gender as:

Female (*241*); Male (*78*); Undefined (*0*)

2. Please identify your age as:

   20-25 (*52*); 26-30 (*67*); 31-35 (*76*)

   36-40 (*34*); 41-45 (*46*); 45-50 (*27*)

   51-55 (*11*); 56-above (*6*)

3. Please identify your teaching area as:

   - Kindergarten teacher (*69*)

   -K1-5 teacher (*98*)

   -K6-12 social sciences teacher (*57*)

   -K6-12 science teacher (*49*)

   -K6-12 foreign language teacher (*19*)

   -K6-12 art and sport teacher (*21*)

   -K6-12 counselor teacher (*6*)

4. Please identify your teaching professional years as:

   -0-5 (*42*) - 6-10 (*39*) - 11-15 (*72*)

   -16-20 (*78* - 21-25 (*67*) - 26-above (*21*)

5. Please identify your experience/degree of comfort with NCTs as:

   -Experienced / Comfortable (*36*)

   -Some Limited Experiences / Some Ability (*127*)

   -Very Little Experience / Very Little Ability (*95*)

   -Inexperienced / Uncomfortable (*61*)

In the second section of the questionnaire, the first sub-section was designed to find out and analyze the Turkish K12 teachers' *behavioral beliefs* toward NCTs. In this sub-section, the first question was tried to investigate the *advantages* of use of NCTs whereas the second question was tried to examine the *disadvantages* of use of NCTs in classrooms. The last question was tried to focus on what *other factors influenced* these teachers' attitudes toward NCTs. The second sub-section was designed to find out and analyze the K12 teachers' *normative beliefs* toward NCTs. In this sub-section, the first question was tried to investigate which people were the *most important* to influence these teachers' intentions toward NCTs whereas the second question was tried to examine which people were the *least important* to influence these teachers' intentions toward NCTs in classrooms. The last question was tried to focus on whether there were *another groups and/or people*, who were influenced these teachers' intentions toward NCTs. The last sub-section was designed to find out and analyze the K12 teachers' *control beliefs* toward NCTs. In this section, the first question was tried to investigate what the *most influential factors* were about NCTs for these K12 teachers whereas the second question was tried to examine what *the least influential factors* were about NCTs for them. The last one of this section was tried to focus on whether there were *other issues and concerns* that would influence these K12 teachers' intentions toward NCTs.

Each question in the questionnaire was carefully developed and modified according to investigating the focus of the study. Besides, this study focused on producing the meticulous description of Turkish K12 teachers' intentions toward NCTs, and also developing possible explanations of this phenomenon in its natural context.

Data Analysis

The analysis of Turkish K12 teachers' intentions toward NCTs began at the beginning of the Fall 2003 Semester and continued through the final written report at the end of the Fall 2005 Semester. The data analysis process in this study was analytic and recursive to inform further decisions on data being collected. It also was restructured, flexible and open to the discussions with the stakeholders and reviews of related literature. During the data analysis procedure, the researchers briefly followed these steps given in a logical order:

1. Determine the *positive indicators* of the K12 teachers' intentions toward NCTs based on the related literature,
2. Discover the *negative behaviors/actions* of the K12 teachers' intentions toward NCTs based on th related literature,
3. Find out the *salient beliefs* of the K12 teachers' intentions toward NCTs based on the related literature,
4. Write the nine questions for the questionnaire according to the *positive indicators negative behaviors / actions* and *salient beliefs* of the K12 teachers' toward NCTs based on the related literature,
5. Make the research participants sign the informed consent forms,
6. Hand out the paper-pencil questionnaires to the K12 teachers,
7. Take the questionnaires back in three month,
8. Explore the dimensions of behavior, normative and control beliefs of the teachers' toward NCTs,
9. Identified patterns and themes, and
10. Write a report.

After exploring and identifying patterns and themes, the researcher triangulated the qualitative data and reported the results in descriptive and narrative form together. Beside, the researchers systematically stored the qualitative data by following a careful data management process to document and analyze the data collection.

The Positive Indicators of K12 Teachers' Intentions toward NCTs

The researcher defined the positive indicators based on the related literatures and experts' opinions from the globe. There are collected *20 positive indicators* to show the K12 teachers' intentions toward NCTs (Goldenberg and Gallimore, 1991; Smylie, 1992; Brush and et al.,1993; Downes, S. 1993; Olivar, 1994; Russet, 1995; Anderson and Perry, 1995; O'Neil and Coel, 1996; Metzler, 1996; Cornish and Monahan, 1996; Ingesman, L. 1996; O'Neil and Coel, 1996; Papert, 1997; Wiburg, 1997; Akbaba and Kurubacak 1997; Lawless and Smith, 1997; ; Brisco and Peters, 1997; Geyer, 1997; Grabowski and Koszalka, 1997; Ike, 1997; Christensen and Knezek 1997; Jaffee, 1998; Knezek and Christensen, 1998; Christensen and Knezek, 1998; Fabos and Young, 1999; Smith, Martin and Lloyd. 1999; Koszalka, Prichavudhi and Grabowski, 2000; Lin, 2001; Koszalka, 2001; Roth, 2001; Xiadong and Kinzer, 2003).

The K12 teachers *would like to*

1. buy magazines and books about NCTs and technological improvements
2. read magazines and books about NCTs and technological improvements.
3. watch TV programs about NCTs and technological improvements.
4. use NCTs at home.
5. have NCTs in their schools.
6. collaborate with people who have knowledge about NCTs.
7. use NCTs versus old communicational tools.
8. hear information about their students about technological improvements.
9. Talk about NCTs and technological improvements with house hold.
10. inform people about NCTs and technological improvements.
11. be a member of technological associations and clubs.

12. attend technological fairs regularly.
13. search on the Internet daily.
14. communicate with their colleagues via NCTs.
15. use more NCTs in the future.
16. utilize NCTs needs of all students.
17. learn more about NCTs.
18. be ready for new technological improvements.
19. use NCTs above average in their classes.
20. be satisfied with the current use of NCTs in the School.

These *positive indicators* help the researcher explore and analyze possible explanations related to these teachers' mental and emotional states of readiness to adopt NCTs. Integration and use of NCTs into teaching is strongly dependent on the K12 teachers' knowledge of novel technology applications. Therefore, these defined *positive indicators* can assist the stakeholders, practitioners and researchers in encouraging interactive communications and continued collaborations among teachers as well the high-technology integration into schools. On the other hand, these *positive indicators* can help these teachers facilitate inservice programs regularly that provide training on NCTs in teaching.

The Negative Behaviours/Actions of the K12 Teachers towards NCTs.

The researcher defined the negative behaviors/actions of the K12 teachers toward NCTs based on the related literatures and experts' opinions from the globe. There find out *20 negative behaviors/actions* of the K12 teachers (Goldenberg and Gallimore, 1991; Smylie, 1992; Brush and et al.,1993; Downes, S. 1993; Olivar, 1994; Russet, 1995; Anderson and Perry, 1995; O'Neil and Coel, 1996; Metzler, 1996; Cornish and Monahan, 1996; Ingesman, L. 1996; O'Neil and Coel, 1996; Papert, 1997; Wiburg, 1997; Akbaba and Kurubacak 1997; Lawless and Smith, 1997; Brisco and Peters, 1997; Geyer, 1997; Grabowski and Koszalka, 1997; Ike, 1997; Christensen and Knezek 1997; Jaffee, 1998; Knezek and Christensen, 1998; Christensen and Knezek, 1998; Fabos and Young, 1999; Smith, Martin and Lloyd. 1999; Koszalka, Prichavudhi and Grabowski, 2000; Lin, 2001; Koszalka, 2001; Roth, 2001; Xiadong and Kinzer, 2003).

The K12 teachers *do not*

1. use NCTs in their classrooms.
2. encourage their students using NCTs.
3. support new technology buying their schools.
4. use NCTs in their daily lives.
5. utilize NCTs to communicate with others.
6. want to attend any inservice training programs about NCTs
7. enjoy talking about NCTs with their colloquies.
8. want to change anything with the current use of NCTs in their schools.
9. feel more comfortable using NCTs.
10. feel that their experiences with NCTs in the schools help to prepare them to complete in a post-secondary school.
11. serve on a committee to develop a plan for the future use of NCTs in their schools.
12. think that NCTs are integrated into the curriculum on a daily basis.
13. work unsupervised and self-directed.
14. improve school-community communication through NCTs.
15. attend workshops on NCTs and technology enhancements.
16. spent money to learn more about NCTs.

17. have the necessary skills regarding NCTs.
18. teach with the computerized tools.
19. need inservice training for integrating NCTs in curriculum.
20. have all answers regarding the use of NCTs in their classrooms.

These *negative behaviors/actions* show that the K12 teachers must change their pedagogical strategies and principles to integrate NCTs in the classroom. Besides, these *negative behaviors/actions* underline why these teachers not only establish but also maintain powerful relationships of mutual teaching by sharing of ideas and practices, discussing the effective choices to adopt new ideas and practices, and also collaborating inside and outside the communication milieus (Koszalka, 2001). Therefore, these teachers can voluntarily change their teaching strategies and attitudes toward NCTs to improve the quality of learning in their students. Finally, the *negative behaviors/actions* can provide the researcher with effective clues and road maps about how the K12 teachers can take advantages of NCTs-based teaching activities by decreasing their isolation feelings in their classrooms.

The Salient Beliefs of the K12 Teachers toward NCTs

The following 20 items are determined as the *salient beliefs* of the K12 teachers toward NCTs based on the literature reviews and experts' opinions (Goldenberg and Gallimore, 1991; Smylie, 1992; Brush and et al.,1993; Downes, S. 1993; Olivar, 1994; Russet, 1995; Anderson and Perry, 1995; O'Neil and Coel, 1996; Metzler, 1996; Cornish and Monahan, 1996; Ingesman, L. 1996; O'Neil and Coel, 1996; Papert, 1997; Wiburg, 1997; Akbaba and Kurubacak 1997; Lawless and Smith, 1997; ; Brisco and Peters, 1997; Geyer, 1997; Grabowski and Koszalka, 1997; Ike, 1997; Christensen and Knezek 1997; Jaffee, 1998; Knezek and Christensen, 1998; Christensen and Knezek, 1998; Fabos and Young, 1999; Smith, Martin and Lloyd. 1999; Koszalka, Prichavudhi and Grabowski, 2000; Lin, 2001; Koszalka, 2001; Roth, 2001; Xiadong and Kinzer, 2003):

The K12 teachers *think* that

1. NCTs are going to replace them.
2. They will lose their authority into classroom
3. they are too old to learn about NCTs.
4. they are overloaded with NCTs.
5. they can be unsuccessful using NCTs into classrooms easily.
6. NCTs create uncertainty due to their unknown results.
7. NCTs bring alienation.
8. their roles will change radically into classrooms.
9. they will lose their jobs.
10. they waste their times to learn about NCTs.
11. they can be addicted to use of NCTs.
12. they will not be the first and unique sources of information into classrooms, so that lose their status.
13. they have no enough time and money to learn more about NCTs.
14. they do not have skills to utilize from NCTs into their classrooms.
15. they have never enough experiences with NCTs into their classrooms.
16. they are not able to work self-directed with NCTs.
17. NCTs generate artificial communication milieus among teachers.
18. they cannot read the related literature and trends in NCTs.

19. they cannot maintain regular communications with the administrative offices.
20. they cannot review, organize and use NCTs to other teachers.

These *salient beliefs* help the researcher how to change and reorganize the K12 teachers' deep negative feelings toward NCTs. Therefore, these teachers can be awareness about their feelings, skills and thoughts about NCTs that this process helps them adopt technological innovations easily. This is important to empower the potentials for using NCTs by promoting these teachers' positive reflections. Moreover, these *salient beliefs* help researcher explain these teachers' biases, stereotypes and understandings of NCTs. Therefore, the K12 teachers can explore their values, insights and norms as well as responsibilities about the use of NCTs in their classes.

Findings and Discussions

This present study addressed the following main research question: *What are Turkish K12 teachers' intentions toward New Communication Technologies (NCTs)?* This section reports the findings, which emerged during the data analysis, to answer the research question and its sub-questions. The collected data had shown the *behavioral*, *normative* and *control beliefs* of the 319 Turkish (241 women and 78 men) K12 teachers.

Turkish K12 teachers' *Behavioral Beliefs* toward NCTs

In this research, the K12 teachers' *behavioral beliefs* are in combination with the subjective values of the expected outcomes to determine their prevailing attitudes toward the behavior. Specifically, their attitudes toward NCTs are the degree to which performances of their behaviors are positively or negatively valued.

Therefore, according to the collected and analyzed data of this study, all participants in this study have these positive attitudes NCTs listed below:

Positive attitudes toward NCTs listed below:

1. Teachers must rethink and restructure their. Teaching methods with NCTs
2. NCTs improve interactive communications among teachers.
3. NCTs have potentials to bring the current issues into classrooms.
4. NCTs make communications more enjoyable and interactive.
5. NCTs can meet students' diverse learning styles.
6. NCTs help teachers save their time regarding the information storage.
7. NCTs help teachers give prompt and effective feedback to their students.
8. NCTs help teachers accomplish their responsibilities in schools.
9. Teachers are eager to learn more about how to utilize NCTs in classrooms.
10. NCTs help teachers organize their files and students' portfolios easily.
11. NCTs can be useful for developing teachers' critical thinking skills.
12. NCTs help teachers assist in developing an effective technology plan.
13. NCTs enhance the research skills of teachers utilizing all available resources.
14. NCTs can help teachers be ready for the future.

According to the *positive indicators, negative behaviors/actions, salient beliefs* defined in the Method section of this study, the most important *positive attitude* for the 253 K12 teachers toward NCTs was to rethink and restructure their teaching methods with NCTs. The majority of these teachers (79.3%) tended to focus on empowering their teaching skills via NCTs. In this study, the

second most important *positive attitude* for the 211 teachers (66.1%) was that NCTs could improve interactive communications among teachers. Of 319 teachers, the 163 K12 teachers (51.1%) believed that NCTs enhance their research whereas the 85 of them (26.6%) pointed out that *NCTs* can help them be ready for the future. Of 241 female teachers, the 172 ones (71.3%) indicated that they could give prompt and effective feedback to their students via NCTs whereas the 63 male teachers (80.8%) highlighted that NCTs could make communications more enjoyable and interactive in their classes. Of the 52 youngest teachers, the 23 of them (44.2%) emphasized that NCTs helped them accomplish their responsibilities in schools whereas the majority of the eldest ones (66%) mentioned that they were eager to learn more about how to utilize NCTs in their classrooms. Of 69 kindergarten teachers, the 21 teachers (30.4%) only emphasized that NCTs could be useful for developing their critical thinking skills whereas the majority of science teachers (75.5) pointed out that these new communication technologies had potentials to empower their higher-order skills. The majority of the teachers (77.2%), who had some limited technology experiences and/or abilities, strongly highlighted that NCTs could help them assist in developing an effective technology plan.

According to the collected and analyzed data of this study, all participants in this study have these *negative perceived social pressures*, which they use or do not use NCTs in their classes, listed below:

1. NCTs are not as effective as teachers in classrooms.
2. NCTs generate implemented in communicational isolation from each other.
3. NCTs cannot be used in every academic discipline.
4. NCTs cannot prepare teachers to work more successfully in a global society.
5. NCTs cannot improve school-community communications.
6. NCTs cannot meet the needs of all teachers.
7. Teaching with NCTs takes more time than teaching with old fashion ones.
8. NCTs are not for everyone.
9. Using NCTs needs much more money.
10. Utilizing NCTs needs much more time.
11. NCTs in schools cannot easily up-to-date.
12. NCTs are for use by computer gurus only.
13. NCTs cannot make teachers more comfortable communicating with students.
14. NCTs cannot meet teachers' varied teaching styles.
15. NCTs are not very important in classrooms.
16. Developing a technology plan for the future use of NCTs is not necessary for teachers to serve their communities.
17. NCTs decrease teachers' self-esteem and competency in classrooms.
18. NCTs cannot improve student performance on tests.
19. Providing ongoing teacher training is not efficient for the teachers to adapt NCTs easily.

According to the *positive indicators, negative behaviors/actions, salient beliefs* defined in the Method section of this study, the most important *negative attitude* for the majority K12 teachers (86.8%) toward NCTs was that these technologies were not as effective as teachers in classrooms. In this study, the least important *negative attitude* for the majority teachers (94.0%) was that providing ongoing teacher training was not efficient for these teachers to adapt NCTs easily. Of 241 female

teachers, the 148 ones (69.2%) and of the 21 art/sports teachers, the 18 of them (85.7) indicated that NCTs could not be used in every academic discipline whereas the 39 social science teachers (68.4%) highlighted that NCTs could not improve student performance on tests. Of 69 kindergarten teachers, the 21 teachers (30.4%) only emphasized that NCTs could not improve school-community communications whereas the majority of foreign language teachers (68.4%) strongly indicated that NCTs in schools could not easily up-to-date. The majority of the teachers (91.6%), who had very limited technology experiences and/or abilities, strongly highlighted NCTs were for use by computer gurus only whereas the 37 science teachers (75.5%) pointed out that utilizing NCTs needed much more time.

Turkish K12 teachers' *Normative Beliefs* toward NCTs

In this research, the K12 teachers' *normative beliefs* refer to the perceived behavioral expectations of such important referent individuals or groups. These normative beliefs were in combination with the teachers' motivations to comply with the different referents. Besides, the subjective norms of the K12 teachers were the perceived social pressure to engage or not to engage in a behavior.

According to the collected and analyzed data of this study, all participants in this study have these *positive perceived social pressures* which they use or do not use NCTs in their classes, listed below:

1. Students
2. Teachers' children
3. Supervisors
4. School principals
5. Other teachers
6. Communicational media staff
7. Inservice trainers
8. Computer teachers
9. Superintendents

According to the *positive indicators, negative behaviors/actions, salient beliefs* defined in the Method section of this study, the most important *positive perceived social pressures* for the majority of these K12 teachers (86.5%) were their students and children. These teachers indicated that their students and also children provide them with up-dated-information about new technological improvements. Of 21 teachers, who had 26 years or more professional teaching years, the 19 of them (90.5%) strongly highlighted that superintendents were the most important *positive perceived social pressure* for them whereas the 52 of the male teachers (66.6%) indicated that school principals had important *perceived social pressures* on teachers.

According to the collected and analyzed data of this study, all participants in this study have these *negative perceived social pressures*, which they use or do not use NCTs in their classes, listed below:

1. Parents
2. Politicians
3. Stakeholders
4. Supervisors
5. University professors and staff
6. Teachers' spouses
7. Student counselors
8. Technology Journalists

According to the *positive indicators, negative behaviors/actions, salient beliefs* defined in the Method section of this study, of 319 teachers, the 298 ones (93.4%) strongly pointed out that not only parent but also ans had the most important *negative perceived social pressures* on them. The 32 teachers (69.6%), who were between 41-45 years old, the 72 elementary teachers (73.5%) and

also the 103 female teachers (42.7%) indicated that university professors and staff had *negative perceived social pressures* on them to adopt NCTs in their classrooms. Of 319 teachers, the 65 of them (20.4%) emphasized that technology journalist had *negative perceived social pressures* on K12 teachers to utilize NCTs in their teaching activities.

Turkish K12 teachers' *Control Beliefs* toward NCTs

In this study, the K12 teachers' *control beliefs* had to do with the perceived presence of factors that could facilitate or impede performance of a behavior. Therefore, these control beliefs were in combination with the perceived power of each control factor.

According to the collected and analyzed data of this study, all participants in this study have these *positive perceptions* of their ability to use or not use NCTs in their classes:

1. Teachers need technological supports in terms of utilizing NCTs effectively.
2. Teachers must use NCTs beyond word processing level.
3. The Turkish Education Ministry must provide inservice training for not only teachers but also administrators regularly.
4. Teachers must assist in preparation of an effective technology plan.
5. Administration must coordinate inservice related programs for teachers.
6. NCTs can provide teachers with insights that underline operability and functionality.
7. Teachers can build student knowledge by bringing diverse perspectives to a given problem via NCTs
8. NCTs can provide authentic teaching tasks for teachers that engage students in experiences.
9. In service training staff can train teachers in basic Computer techniques to offer their students diverse learning experiences via NCTs.

According to the *positive indicators, negative behaviors/actions,* of this study, the most important *positive perceptions* for the majority K12 teachers (78.1%) was that they needed technological supports in terms of utilizing NCTs effectively. Of 241 female teachers, the 103 of them (42.7%) pointed out that administration must coordinate inservice related programs for them whereas the 65 male teachers (83.3%) strongly indicated that they had to use NCTs beyond word processing level. Of 49 science teachers, the 37 of them (75.5%) that NCTs could provide authentic teaching tasks for them whereas the majority of the teachers, who had very little technology experiences and/or abilities, (66.3%) underlined that The Turkish Education Ministry must have provided inservice training for not only them but also administrators regularly.

According to the collected and analyzed data of this study, all participants in this study have these *negative perceptions* of their ability to use or not use NCTs in their classes:

1. Teachers need much more time to teach with NCTs.
2. NCTs cannot provide students with real life experiences regarding their learning styles.
3. The professional development programs cannot increase teacher opportunities to access NCTs equally.
4. The availability of technology support persons cannot encourage teachers to utilize a greater variety of NCTs in classrooms.
5. Administrators do not focus on a vision of the future of NCTs.
6. Students must perceive that NCTs are more than Computers.

7. There is no time for teachers to restructure their lesson plans around NCTs.
8. Students cannot express their ideas individually by facilitating techno-based learning.
9. Politicians have no idea about how NCTs are integrated into curriculum.
10. Parents are not concerned about how the integration of NCTs is making differences in their children lives.
11. Technology support staff cannot reduce anxiety when teachers teach with NCTs in their classes.
12. University professors and staff cannot help teachers explore ideas about how teachers integrate NCTs into schools nor obtain powerful insights what they have to place their own teaching experiences via NCTs.

According to the *negative indicators, negative behaviors/actions, salient beliefs* defined in the Method section of this study, the most important *negative perceptions* for the majority K12 teachers (67.4%) was that they needed much more time to teach with NCTs whereas the least important *negative perceptions* for them (27.2%) was that university professors and staff could not help them explore ideas about how they could integrate NCTs into schools, and also obtain powerful insights what they had to place their own teaching experiences via NCTs. Of 98 elementary school teachers, the 64 of them (65.3%) pointed out that their students could not express their ideas individually by facilitating techno-based learning whereas the 9 teachers, who were between 51-55 years old, (81.8%) strongly indicated that technology support staff could not reduce anxiety when they taught with NCTs in their classes. Of 19 foreign teachers, the 15 of them (75.5%), the 51 kindergarten teachers (73.9%) and also the 69 elementary school teachers (70.4%) pointed out that parents were not concerned about how the integration of NCTs was making differences in their children lives.

This finding supports the argument that Turkish K12 teachers must construct their own knowledge and skills toward NCTs by embedding their learning in meaningful contexts (Bonk and Reynolds, 1997; Knezek and Christensen, 1998). NCTs generate interactive environments for these teachers to share and exchange information and knowledge in diverse perspectives. Therefore, the teachers in these communication milieus must improve their higher-order skills by analyzing, judging, evaluating and comparing their ideas toward NCTs (Fabos and Young, 1999; Smith, Martin and Lloyd. 1999; Koszalka, Prichavudhi and Grabowski, 2000; Lin, 2001; Koszalka, 2001; Roth, 2001; Xiadong and Kinzer, 2003). On the other hand, the related literatures argue that the K12 teachers can develop more positive intentions toward NCTs when they reflect their feelings, critique their technology skills, share their knowledge with their colloquies (Russet, 1995; Anderson and Perry, 1995; O'Neil and Coel, 1996; Metzler, 1996; Wiburg, 1997; Akbaba and Kurubacak 1997; Lin, 2001; Koszalka, 2001).

The K12 teachers must use a systematic approach to improve a technology plan (Wiburg, 1997; Smith, Martin and Lloyd, 1999; Koszalka, 2001) that they from diverse backgrounds have different teaching styles, skills, interests, needs, and cultural experiences. Therefore, these teachers can make various meaningful connections among their knowledge, practices and skills to integrate and use NCTs into their classrooms. These K12 teachers must understand where and how NCTs lead their community, affect their schools, and kept pace with novel technological advancements in their classroom usages. Finally, to improve more positive intentions, the K12 teachers must obtain at least basic knowledge and skills about NCTs.

Results and Conclusions

In this article, the researcher has attempted to explore and analyze the Turkish K12 teachers' intentions toward NCTs. These teachers point out that NCTs are increasing in their sophistication levels, but becoming more persistent. Besides, these teachers feel that NCTs can make teaching planning more efficient and accurate, and also provide with interactive communication milieus. However, there are existing powerful relationships between their teaching attitudes and technological competencies. In this study, these teachers indicate that they do not prepare mentally for action in their classes. Therefore, this situation shapes their classroom postures toward integrating NCTs in curriculum. Finally, the findings of this study show that these teachers have lack of self-confidences due to their poor technology skills and knowledge.

Having positive attitudes, beliefs and behaviors help these teachers actively engage in their teaching progresses and critically reflect upon their feeling and insights (Mager, 1968). Also, these issues can encourage them to effectively transfer their knowledge to the new educational contexts. As a result, they can improve their complex critical thinking skills to create, produce and demonstrate their knowledge that provides the rubrics for NCTs. Developing critical thinking skills to utilize NCTs must be the most important goals for the K12 teachers. When these teachers think critically, they become active, productive, hopeful, and psychologically healthier people. Besides, to promote collaborations and interactions among teachers, professionals, students and community via NCTs, these teachers can involve in developing a technology plan to meet their changing needs and also realize new teaching opportunities. The Turkish K12 teachers must spend extra efforts to integrate NCTs into daily teaching routines.

This article can help Turkish K12 teachers to rethink their intentions toward NCTs by focusing on the more pressing educational and social problems of our time. Besides, they have to understand the achievement challenges and concerns of how they use NCTs in classrooms. This study, therefore, can provide detailed information about the changing needs and expectations of the K12 teachers, who want to use NCTs in their classrooms. On the other hand, this study shows that insufficient inservice training programs and technical supports, lack of control of specific initiatives, and lack of access to equipment and inadequate staff development are major pitfalls for the K12 teachers to empower their positive intentions toward NCTs. Therefore, an effective technology plan must be developed to encourage Turkish K12 teachers to utilize NCTs in their classrooms.

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