



CHANGE AND INNOVATION: A STUDY TO DEVELOP A SCALE FOR TEACHERS' ATTITUDES TOWARDS CHANGE

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ABSTRACT

As constructivist approach adopted and enacted by Turkish Ministry of National Education in primary schools in 2006 is considered “to be an innovation”, aim of this study is developing a scale to determine teachers’ attitudes towards innovations. The study of developing an original scale to determine the focal points of teachers’ perceptions during the process of adopting constructivist approach as an innovation began by asking open ended questions to 100 primary school teachers and collecting their responses in a pool of items. Pool of items was analysed by a jury of nine members, opinions of jurors were analysed for correlation, and the items taking averages over 2.50 out of 5 were applied on a trial group of 60 primary school teachers. The scale of measurement obtained after factor analyses and necessary corrections was applied on a group of primary teachers consisting of 248 female, 159 male teachers. To maintain construct validity of the scale, factor analyses was done and a three factor, “focusing”, “lack of information related to practice”, “professional concerns”, a 44 item scale was obtained with factor loadings between .71 and .77. Cronbach alpha internal consistency value as .84. As a result of validity and reliability analyses, a highly valid and reliable scale to determine teachers’ attitudes towards change was developed.

Keywords: innovation, curriculum, curriculum changing, perceptions of primary schools teachers’.

INTRODUCTION

Certo (2000), puts innovation as “use of new methods in service provision and developing new methods on working conditions”. According to Westerman, McFarlan and Iansiti (2006), innovation is related to future, its dominant feature is achieving high effectiveness by focusing on diversity and research. Hurst (2000), explains this situation as the relation of the continuity in the change with the self repeating patterns in the change and rhythms of life. Past, while progressing in its path, helps us remember the patterns and past events. Thus, the need to go back in order to renew and progress ahead emerges. So, renewal becomes something rhythmic. Drucker (1994), when taken from this point of view, emphasizes that innovation refers to both a process and a result. Because, as innovation, improvement, or development requires change, product or service produced by this process is new, developed or changed.

Organizational change may be achieved by operational work or short-term attempts. When reasons inside or outside the organization (Drucker, 1994), competition, increasing speed of information, changing expectations combine with the effect of power sources classified as new regulations (Hussey, 1997) and technology, the interval between successive changes tend to be disappear. Daft (1983), considering organization surrounded by challenging sources of power, mentions two types of planned



change for successful organizations. First of these is incremental change. Incremental change is a process of progress plan in various sections of the organization, which aims to proceed slowly. Transformal change, on the other side, is redesigning and reanimation of the whole organization. Especially transformal change is not an easy task at this point.

In organizational structure, change may indicate any risk or danger originating from from the internal or external interactions (Inancoğlu 2002), in parallel with this; Daft (1983) puts that problem may be hidden and difficult to feel in most cases. Daft (1983) explains that; in managers' feeling the need for innovation, *performance gap*- the distance between the level of targeted performance and the performance achieved- is an important method. Such a determination requires a sensitive monitoring system. Starting point in organizations resembles a situation that Senge (2000) describes as *creative tension*. When organizations see the gap between the vision they want to achieve and the reality, organizations experience a tension originating form this gap. The tension generating actions to close this gap is thought as creative tension. Nevertheless, it shouldn't be forgotten that innovation and change is accompanied by resistance. Several classifications were made in the researches related to the reasons why employees resists to change (E.g; Trott, 2002; Erturgut 2000; Daft 1983; Koçel, 2001; Sadler, 1993; Ozkalp and Kırıl, 1996). Knowing these sources of resistance helps to determine important new strategies related to innovation process management.

Constructivist approach can be seen as an innovative act in education. Constructivist learning approach was first adopted in England in 1989. Cockroft Report developed in 1982 was the basis behind the practice. Same year in USA, constructivist learning based “Program for School Math and Evaluation Standards“ was developed by NCTM (National Council of Teachers of Mathematics). Programs based on constructivist learning are still prepared in the USA, Germany, Taiwan, Spain, Australia, Canada, Israel, and New Zeland (Güzel-Alkan, 2005).

On the decision of Board of Education and Discipline, date:12.07.2004 and number: 114, and on the approval of Ministry of National Education, date: 18.11.2003 and number: 12438, Math Program For Primary Schools (grades 1-5) developed by a Specialized Board formed by The Board of Education and Discipline was adopted for the firs time to experiment in 2005-2006 academic year as a pilot study in some pre determined primary schools in some provinces in Turkey. The program change -adopted after the pilot study-, which covers 1-5 years in primary education, is not an ordinary program change but a holistic, reformist transformation to change educational practices fundamentally.

Results of the Piloted study were analyzed by an Assessment Commission consisting of academics, in the coverage of Sabancı University Educational Reform Attempt. The aim of this study was to evaluate and analyze the teaching programs of: Turkish, Mathematics, Life Sciences, Social Studies, Science and Technology lessons developed for primary school 1-5 grades on the decisions 114, 115, 116, 117 and 118 dated 12.07.2007 by Ministry of National Education, the Board of Education and Discipline, in regards to content, input, process and product. Basic criteria for assessment were expressed as internal and external criteria. For external criteria, former education programs in act and overseas programs were taken for reference. Consistency, student centeredness, continuity, flexibility, transparency, and approach, values/skills the program takes bases were determined as internal criteria. In addition, characteristics of the programs were also considered from different points of view and submitting suggestions for administering the programs, after a yearlong study, the report was delivered to Educational Reform Attempt in 2005.

When the practices analyzed, it is seen that the suggestions related to teachers dimension were not taken into consideration; teachers' opinions and suggestions in the progress of the program were not researched periodically through scientific methods. At this point, the model C. Jacobs (2000, reporting from Johansen and Murphy 1999) presents for the evaluation of educational innovation in a context of



transformation is remarkable. Jacob's model incorporates formative, summative and illuminative evaluation goals and stresses the need to locate the innovation which is being evaluated within the context and policy framework of its operation. Besides transformative educational context, Evaluation framework considers all variables affecting the innovative educational practices presented by the model. In Jacob's study (2000) the term educational innovation refers to any form or type of educational practice which is new to or only marginally implemented in a particular academic context, and which is designed to develop, improve, make more relevant, or be more responsive to the needs of: (1) the academic curriculum, (2) the teaching process; and (3) the learning process.

In the context of transformation, it consists of the following stages of evaluation to evaluate educational innovation (Jacobs, 2000): (1) Identifying the principle stake holders from all the relevant constituencies, and the most influential stake holders for the innovation. For example for a higher education institution the principal stakeholders would fall into the four broad categories of students, academic staff, institutional support services and policy makers. (2) Different aspects of the innovation to be evaluated should be identified. These aspects should be determined collaboratively, involving input from as many stakeholders as possible as this process affords stakeholders a measure of control over the nature of the evaluation activity (Guba and Lincoln, 1989 in Jacobs, 2000). (3) Criteria to evaluate the various aspects of the innovation should be determined. (4) Using the criteria described in the previous stage, the evaluators should decide on the best sources of information to evaluate different aspects of the innovation. (5) Evaluators should decide on which methods of evaluation to be used. (6) For the healthy process, the data are gathered from previously determined sources. (7) Processing and interpreting the data collected (qualitative, quantitative methods, discourse analyses etc). (8) Evaluator shares the findings.

The piloted program inspected by various institutions it has been researched several times so far. For example, Güzel and Alkan's research (2005) carried out in pilot study schools with a sample group of 750 4th and 5th grade students aiming to reflect students' evaluations related to the program is one of those researches. The most important of the findings was students' positive attitude towards constructivist learning approach. According to the findings of the research, students adapt themselves to the constructivist learning environments better than their teachers. Another remarkable study is Baki and Gökçek's (2005) Comparison of Primary School (grades 1-5) Program Development Activities in Turkey and the USA. According to the findings of this study, the new educational program developed by Board of Education and Discipline covers %100 of EM, IN, MT program development projects learning areas developed with the administration of NCTM (National Council of Teachers of Mathematics). This means that new math program is directly influenced by the NCTM standards and program development activities based on these standards.

It is indicated that the results of curriculum changes at reform level are analyzed regularly by The Ministry of National Education. Independent researchers also research the subject. But, as Demirel puts (1992), in some European countries such as Denmark, Sweden and Norway activities related to program development were started in 1940s and adopted education programs were revised through experimental researches. For example, only in Swedish universities, we see that two thirds of researches carried out between 1973-1974 are about programs. So, diversity and number of the overseas studies related to program changes and the results of these program changes attract attention.

In recent years, education is under the effect of large-scale innovations designed according to the reproduced teaching and learning theories. The complex and multi-dimensional characteristic of the innovations causes changes in teachers' traditional expectations and troubles. Thus, for the success of a large scale change, teachers' concerns and conflicts, their dilemmas, resistance points and their sources, and feelings must be analyzed in detail. Researchers explain that as well as objective conditions and characteristics of the innovation, for the success of an innovation, participants of the



innovation and the importance those participants attribute to the innovation is also important. Geijsel et al. (2001) conclude that the positive impact of professional development activities on teachers' implementation of large-scale innovations is small. Because, impact of education carried out according to qualification structure principles is more influential. For example, for the teachers working in primary schools the degree to which the teachers undertook professional activities did not affect the degree to which they agreed with the qualification structure principles but did affect the degree to which they taught according to the qualification structure principles. Feelings of uncertainty also negatively influenced the implementation of both the basic education curriculum and the qualification structure.

Sharma (2005), highlights the mechanisms that foster, sustain and help initiate innovations in schools and the critical importance for considerations related to those mechanisms. Analyzing the innovative activities carried out in 4 schools, Sharma (2005) puts the systems, processes and procedures fostering innovations. Sharma points out that the 4 schools in different parts of the country implemented innovative practices in the area of pedagogy, curriculum, evaluation, management, resource mobilization and according to the findings leadership plays a critical role in promoting innovations in schools. Sharma also emphasizes transparency in vertical horizontal communication, establishment of a communication network between the school and the people and institutions being served. Researcher indicates that innovative schools are equipped with well defined, registered system of social support and monitoring. Researcher also indicates that teacher training, developing procedures for sustaining growth, forming decentralized participant management systems play an important role for the achievement of these schools. The reflections of these findings related to the innovation management in schools are still matters of discussion.

Geijsel and others (2001), studied teachers' perceptions on the implementation of two large-scale innovation programs by teachers from two sectors of Dutch agricultural education. Results of the research carried out in 4 sub dimensions of transformational leadership, participation in decision making, teachers' feelings of uncertainty, and the extent to which professional development activities affect teachers show that teachers have an important role in innovation process. Because innovation and change become successful the extent to which teachers are involved in the decision making processes.

The main purpose of the study, an adaptation of the Stages of Concern Questionnaire (SoCQ) based on the Concerns-Based Adoption Model (CBAM) by Christou et al. was to identify and examine the concerns of primary school teachers in Cyprus in relation to the recent implementation of a new mathematics curriculum and the use of new mathematics textbooks (Christou et al. 2004). An adaptation of the Stages of Concern Questionnaire (SoCQ) based on the Concerns-Based Adoption Model (CBAM) was administered to a representative sample of teachers in Northern Cyprus. Concerns-Based Adoption Model (CBAM) model is an instrument which educational administrators use to evaluate innovations. This model shows how the worst influenced individuals react against the practices of these changes. According to the findings, teachers' concerns focus on the task sub dimension on CBAM model. Furthermore, while teachers' concerns vary according to their degree of experience, teachers' concerns do not vary according to their level of familiarity with the program. In short, it is perceived that there is difference among teachers' level of concern as to their level of experience (for relations between extreme adaptors-extreme innovators and team balanced ones in teachers' personality dimension, see Bobic et al., 1999; for designing constructivist learning environments, see Jonassen and Murphy, 1999).



Purpose

The purpose of the study is to develop a scale to analyze of teachers' attitudes towards change.

METHOD

A survey design was employed in this study (Karasar, 2011; Cohen and others, 2005).

Population and sampling

In the present study, a survey method was used to investigate the attitudes of primary school teachers about change. Sample group of the research consists of the primary school teachers working in the schools in the province of Istanbul-Turkey. As choice of sampling, Facilitating Sampling Approach was adapted. For validity and reliability of the scale, considering the number of items on the scale, researchers reached 408 primary school teachers working in Istanbul.

Developing the Instrument

Scale development study for A Scale for Teachers' Attitudes Towards Change is composed of several steps. These are: 1) literature review, 2) pooling survey questions (100 primary teachers actively teaching according to new program were asked about their opinions and evaluations related to the new program) 3) teachers' compositions about the new program and innovation process were analyzed and a pool of 243 questionnaire items were formed. 4) The items in the pool of questions were compared to those items on the similar scales used for similar purposes in literature. 5) 3 items existing in the literature of such researches but not covered by the 243 item pool of items were detected and those 3 items were included in the list to finalize it. Final version of the list of 246 items was given to 9 experts (jury) of educational sciences. The group of experts (jury) analyzed the items in regards to; length, understandability, adequacy and representing the coverage of the subject. The groups of experts were asked to indicate their grading for each of 246 items as "necessary", "useful but not necessary", "unnecessary". According to the statistical analysis of the jurors' evaluations, items the average points of which are over 2.50 were determined. The items requiring changes for clarity or briefness were corrected, improved for each item, depending on the number of experts, Standard deviation value was significant at .75 significance levels (Veneziano and Hooper, 1997).

After the final evaluations, 192 items excluded from the list and the draft version of the scale consisted of 54 items. At this stage, pilot form was applied to a trial group of 60 primary school teachers who previously used the new curriculum and who are teaching in the primary schools in Istanbul. The form applied to sample group asks teachers to indicate the choice that best expresses his/her opinion, items are in the form of five option Likert type, grading 5 (I agree completely) to 1 (I don't agree at all). According to the results of this pre research practice applied to the group of 60 teachers, considering the suggestions made by the teachers, the scale was analyzed again and made some corrections (spelling corrections, corrections to clarify the meaning, design of the scale form). At this development stage of the scale, a factor analysis of the collected data was performed. In this perspective, principal components analysis, verimax rotation was used.

The Scale for Teachers' Attitudes Towards Change form, developed after pilot studies and expert group evaluations were given to 600 primary school teachers by the researchers in person. The returned forms (questionnaire forms) were analyzed by the researchers and the data on 408 of them were processed for scale development purposes. Sample group of 408 teachers consist of 248 female teachers (% 60.8) and 159 male teachers (%39). Variables about the 408 teachers are as follows:

**Table 1: Distribution the Subjects of Participants**

Lessons	F	%
Primary school teacher	240	58.8
Mathematics	23	5.6
Science	25	6.1
Foreign language	46	11.3
Arts	8	2.0
Physical education	8	2.0
Music	6	1.5
Social studies	29	7.1
Turkish	23	5.6
Total	408	100

First six subjects taught by the participant teachers (386 teachers = %94.5) from the highest to the lowest, are classroom teacher (teaching classes 1-5 grade) %58.8, Foreign Language (English, German, French) %11.3, Social studies (%7.1), Science (%6.1), Mathematics (%5.6), Turkish (%5.6).

Reliability analysis

Using Likert type grading system on the scale, requires calculating Cronbach alpha (α) of reliability coefficient for the scale and sub dimensions of the scale. Cronbach alpha (α) value will show the internal consistency of the items out of 1. Besides Cronbach alpha (α), internal reliability quotient of the scale was also calculated using Guttman split half method. Dividing the items on the scale into two, this method helps to see the relation between total values of the items in the two halves. In addition, using correlation techniques of item total, and item remainder, internal consistency of the scale was analyzed. Item total technique shows the relation of the value for each item with calculated total points, and item remainder technique shows the relation between the value for each item and the residual value of the total points when this value is subtracted from the total points. These results should be significant at $p < .05$ level. In item discrimination analysis, results of Independent-Samples t test (unpaired group t test) show whether replies for each item vary in the top and bottom half groups, thus it shows the capacity of item discrimination.

Validity analysis

For factorial validity of the scale, factor analysis was done, and factor analysis significance rate was examined with Barlett's Method and KMO test results. Results of the analysis are shown at Table 2 below.

Table 2: KMO and Bartlett's Test Values

Kaiser-Meyer-Olkin Sampling Sufficiency		,869
Bartlett's Test of Sphericity	Chi square degree	6499,456
	S. degree	946
	P	,000

Table 2 shows that KMO result is ,869. This result shows that sampling group is suitable for factor analysis. In addition, Chi square degree is calculated as 6499,456 for Barlett's Test Results. This result is statistically significant at $p < 0.01$ level. This result shows that the distribution of the data is normal. In factor analysis Eigen value was taken 1 at first and total 14 factors were produced. Factor loadings for the items were analyzed and 4 that no factors were extracted after first four factors was determined. When Eigen value was 2, three factors were extracted. When Eigen value was 2, 2 items with loadings less than .30 were determined. In third factor analysis, excluding two items with loadings below .30, all items except two had factor loadings over .30. After those two more items

with no loadings were excluded, remaining items had factor weights over .30 in fourth factor analysis. During the analysis of item total and item remainder, six items reducing Alpha value were detected. The total variance table after the exclusion of those six items from the scale is as follows.

Table 3: A Scale for Teachers Attitudes Towards Change Total Variance

Factor	Initial Eigen values			Total Factor Weights Loadings		
	Total	Disclosed Variance %	Cumulative %	Total	Disclosed Variance %	Cumulative %
1	7,712	17,527	17,527	6,968	15,878	15,878
2	6,276	14,264	31,791	6,212	14,117	29,995
3	2,144	4,873	40,306	2,934	6,668	36,664
4	1,603	3,642	43,627			
5	1,461	3,321	46,688			
6	1,347	3,061	49,506			
7	1,240	2,818	52,240			
8	1,203	2,734	54,812			
9	1,132	2,572	57,265			
10	1,079	2,453				

After factor analysis of 44 items Eigen values of which are over .30 and supporting Alpha value in Item total and Item remainder analysis, 3 factors were obtained. Total variance values of Varimax Rotated Factor Analysis are given in Table 4.

Table 4: Eigen Values and Disclosed Total Variance Values Obtained After Varimax Rotated Factor Analysis

	Eigen value	Variance per cent	Total Percent
I. Factor	6,986	15,878	15,878
II. Factor	6,212	14,117	29,995
III. Factor	2,934	8,668	36,664

As a result of the factor analysis of The Scale for Teachers' Attitudes Towards Change, 3 sub factors with Eigen values over 2 disclosed % 36,664 of total variance. Variance values disclosed by the factors in order, %15,878 for the first factor and %29,995 for the second factor and %36,664 for the third factor. After the analysis first factor had 26 items. According to the item analysis of each factor, items falling into factors are as follows.

Table 5: Items Attracting Weights of Subscales

Factors	Number of item	Item numbers
1	26 items	22, 12, 9, 2, 16, 15, 48, 1, 35, 43, 37, 38, 34, 21, 47, 45, 6, 51, 5, 36, 29, 28, 30, 4, 27, 40
2	14 items	24, 39, 49, 25, 42, 20, 32, 19, 41, 44, 10, 3, 13, 18
3	4 items	53, 54, 50, 52

As can be seen at table 5, first factor consists of 26, second factor consists of 14, and third factor consists of 4 items. According to these dimensions, after omission of items 11, 14, 26, 46 with no weight, and omission of items 7,8,17,23,31,33 with no correlation with total points, with no discriminative value and reducing Alpha value, final version of the scale consists of 44 items. Analyzing items composing each factor group sub groups were named. Considering factorial weights obtained in the research, items composing each group, and literature about the research, first factor group was named "focusing", second factor group was named as "lack of knowledge related to

practice”, and third factor group was named “professional concerns”. For reliability analysis of the factors obtained, Cronbach alpha, Guttman and Spearman Brown techniques were used for the items each factor contains. The results are as indicated on Table 6.

Table 6: Subscales Reliability Values of The Scale for Teachers’ Attitudes Towards Change

Factor	Cronbach α	Guttman	Spearman Brown
General test total	.84	.75	.75
Focusing	.77	.79	.79
Lack of Knowledge related to practice	.73	.61	.61
Professional Concerns	.71	.59	.59

In order to calculate internal consistency values of the values obtained after factor analysis, number of the items on the related subject should be more than 20 ($k > 20$) and number of participants should be more than 50 ($n > 50$). Reliability quotient should also be over 0.60 (Ural-Kılıc, 2005). As seen on the table, reliability values related to subscales were determined according to the following procedure: Cronbach’s Alpha value was .84, Spearman- Brown Value .75 and Guttman split half value was .75. Findings showed that the 3 subscales had internal consistency reliabilities ranging from .71 to .77.

Table 8: Item-Total Correlations (N=408) and Discrimination Analysis Results (N=408)

Items	Item Total Correlations		Item Discrimination Analysis		
	<i>r</i>	<i>p</i>	<i>Sd</i>	<i>t</i>	<i>p</i>
1. New program aims students to learn by acting and living.	0,353	$p < .001$	406	-29,001	$p < .001$
2. New program helps to produce students with critical thinking skills.	0,340	$p < .001$	406	-32,426	$p < .001$
3. Course books and activity books harmonize with each other.	0,251	$p < .001$	406	-33,536	$p < .001$
4. It is difficult to apply performance tasks in low income areas.	0,320	$p < .001$	406	-25,708	$p < .001$
5. It is impossible to adopt new program in crowded classes.	0,310	$p < .001$	406	-25,218	$p < .001$
6. New activity books support learning.	0,273	$p < .001$	406	-23,733	$p < .001$
9. New program can not be applied as the basic requirements are not met.	0,168	$p < .001$	406	-36,521	$p < .001$
10. Forms and evaluations consume most of teacher’s time.	0,302	$p < .001$	406	-20,281	$p < .001$
12. New program is quite effective for students’ social development.	0,298	$p < .001$	406	-29,148	$p < .001$
13. Parents’ interference in student tasks makes a healthy assessment and evaluation difficult.	0,259	$p < .001$	406	-28,055	$p < .001$
15. New program encourages students to become entrepreneurs.	0,337	$p < .001$	406	-26,634	$p < .001$
16. Program allows students to evaluate themselves.	0,341	$p < .001$	406	-30,764	$p < .001$
18. In new program, in place of <u>subject/topic</u> unity, text unity is more important.	0,285	$p < .001$	406	-26,649	$p < .001$
19. How students learn is more important than what students learn in new program.	0,311	$p < .001$	406	-28,849	$p < .001$



Items	Item Total Correlations		Item Discrimination Analysis		
	<i>r</i>	<i>p</i>	<i>Sd</i>	<i>t</i>	<i>p</i>
20. The carrot and stick approach is replaced by research and learning in the new program.	0,332	p<.001	406	-32,777	p<.001
21. It is difficult to evaluate every activity in a healthy way.	0,372	p<.001	406	-24,246	p<.001
22. Problems originating from practices are abundant.	0,387	p<.001	406	-30,499	p<.001
24. For the program, Classrooms must be consisting of 20 students.	0,433	p<.001	406	-19,001	p<.001
25. Practices related to new program vary in every school.	0,343	p<.001	406	-28,713	p<.001
27. Inspectors supervising the teachers are not equipped/empowered enough about the new program.	0,341	p<.001	406	-40,359	p<.001
28. Performance or project tasks are considered as a burden by the parents and students.	0,036	p<.001	406	-31,740	p<.001
29. While the new program was formulated, teachers opinions were considered.	0,317	p<.001	406	-34,670	p<.001
30. In new programme, the teacher is a guide.	0,331	p<.001	406	-30,715	p<.001
32. Program covers different areas of intelligence.	0,198	p<.001	406	-27,425	p<.001
34. We can not imply the innovations that system change introduced.	0,280	p<.001	406	-31,526	p<.001
35. Differences in students' skills affect classroom activities in a negative way.	0,389	p<.001	406	-39,478	p<.001
36. Parents are unaware of the new practices.	0,343	p<.001	406	-23,703	p<.001
37. We have insufficient number of activity areas.	0,245	p<.001	406	-34,470	p<.001
38. I believe that new program will be more effective than the old one.	0,440	p<.001	406	-26,794	p<.001
39. Due to the new program teachers paperwork has increased.	0,022	p<.001	406	-21,885	p<.001
36. Parents are unaware of the new practices.	0,343	p<.001	406	-23,703	p<.001
40. New program takes students' limited research opportunities into consideration.	0,330	p<.001	406	-37,133	p<.001
41. Program change was made before its basic requirements were met.	0,362	p<.001	406	-37,225	p<.001
40. New program takes students' limited research opportunities into consideration.	0,330	p<.001	406	-37,133	p<.001
41. Program change was made before its basic requirements were met.	0,362	p<.001	406	-37,225	p<.001
42. That course books and activity books are separate is a positive point.	0,376	p<.001	406	-50,000	p<.001
43. Activities improve students' self confidence.	0,311	p<.001	406	-26,617	p<.001
44. Testing system hinders new program and activities from being convincing.	0,330	p<.001	406	-38,925	p<.001
45. In new program, testing and evaluation work focuses on both process and result.	0,313	p<.001	406	-26,040	p<.001



Items	Item Total Correlations		Item Discrimination Analysis		
	r	p	Sd	t	p
47. Teacher- student relations have changed positively.	0,378	p<.001	406	-33,588	p<.001
48. New program develops students skills related to daily life	0,445	p<.001	406	-29,777	p<.001
49. It will take teachers some time to change their former way of instructing.	0,336	p<.001	406	-26,782	p<.001
50. Teachers are not fully informed about the system.	0,376	p<.001	406	-34,118	p<.001
51. That program was put into operation in a short time caused confusion.	0,314	p<.001	406	-29,736	p<.001
52. New program increases teachers' stress related to instruction.	0,122	p<.001	406	-35,306	p<.001
53. Related to some issues brought by the new program I feel myself inadequate.	0,189	p<.001	406	-43,608	p<.001
54. New program requires the use of some methods I am not familiar with.	0,186	p<.001	406	-42,792	p<.001

Pearson correlation coefficient analysis shows that item total correlation is positive and statistically significant ($p<.001$). However, it was thought as an important finding that linear relation was sometimes high, sometimes average and sometimes low. This result indicates that items discriminate the features they are written for, and it also shows that all items take place in the same structure.

Table 9: Correlations Between Subscales of STATC (The Scale For Teachers' Attitudes Towards Change)

STATC subscales	Focusing	Lack of knowledge related to practice	Professional concerns
Focusing		.726*	.214*
Lack of knowledge related to practice			.268*

* $p<.001$

According to the results of Pearson correlation coefficient analysis performed to see whether there is significant correlation between subscales of STATC (The Scale For Teachers' Attitudes Towards Change), correlation between all dimensions is positive and statistically significant ($p<.01$).

Table 10: Correlations Between Total Points of STATC Subscales

STATC subscales	Focusing	Lack of knowledge related to practice	Professional concerns
Total	.922*	.873*	.447*
Focusing		.726*	.214*
Lack of knowledge related to practice			.268*

* $p<.001$

According to the results of Pearson correlation coefficient analysis performed to see whether there is significant correlation between subscales of STATC (The Scale For Teachers' Attitudes Towards



Change), correlation between total points of the factors is positive and statistically significant ($p < .01$), and The Scale for Teachers' Attitudes Towards Change is - in the subscales it defines-a highly valid and reliable scale to measure teachers' attitudes and opinions towards program changes.

DISCUSSION

Results of the study show that teachers have concerns about the constructivist approach recently enacted in Turkey. When the direction of these concerns is analyzed, concerns are observed to intensify on three factors; (a) focusing, (b) Lack of knowledge related to practice, (c) professional concerns.

Findings related to focusing: Teachers have frequently expressed their concerns about the goals and aims on which newly enacted constructivist approach focuses on. From this stand point, this research has showed that teachers concerns are more influence than their personal or professional concerns. Students can not perform the tasks the new approach requires them to perform and their parents involve in this self study exercise. So, parents blame teachers for not giving enough explanation related to the tasks. Primary school teachers repeatedly call parents to school to exchange information on the issue. Teachers are worried about the focus of this paradigm shift and they conveyed their worry through their glosses. Results of this research match with the results of the research carried out by Christou at all (2004) in Southern Cyprus to determine "teachers concerns on adopting a new math curriculum. Similarly in Southern Cyprus, after the change of math curriculum, it was observed that teachers had concerns about the new approach originating from professional, personal, informational reasons and basis. According to the findings of the research carried out by Christou at all (2004) in Southern Cyprus, teachers concerns focus on the task subgroup of CBAM model. Results of this research also show that; teachers have concerns; related to the new procedure, the focal point and aims of the new program, teachers have concerns related to their own professional knowledge and lack of professional training.

Findings related to lack of knowledge related to practice: Concerns originating from teachers' lack of professional training or information-14 items- about the new program comes after teachers' problem of focusing (*concerns about the focus and future of the program*) related to new program. Teachers' second most important concern is that they can't do their job properly as the basic requirements for the new program have not been met and preparations for the new program have not been made yet.

Findings related to professional concerns: Third finding of the research is the professional concerns the teachers have as they feel themselves not empowered for the new program. During the curriculum change process; taking teachers' opinions into consideration, having these sections of practitioners perceive and tolerate the outcomes of the change process constitute the prerequisite for the success of the curriculum change in question. Teachers, however, state that their opinions have never been asked during any phase of this period of transition, moreover they consider government's not taking their opinions and suggestions related to the implication of the new program through a large scale survey as a negative attitude. In fact, this shows implications that teachers have high professional responsibility towards innovations. On the other hand, this situation draws attention to the problems faced during the planning and implication stages of the innovation. This is because teachers indicated that they used the opinions and suggestions part of the data collecting instrument for this research in order to convey their opinions, observations to the authorities and they indicated that they considered this research as a channel to warn the administrators and authorities about the misprogressing process and the shortages they met, and they either wrote their solutions for the problems in the spaces provided or attached to the questionnaire they were given. Geijsel and others (2001) found that professional development activities have little positive effect on large scale innovation projects. The same research, on the other hand, shows that involving teachers into decision-making processes motivates teachers more. These



findings support the findings or ironic expressions teachers forming the sample group of this research enclosed or attached to this research. In these expressions; teachers complain sometimes about the parents who are not well informed about the new system and doing their children's homework, some other times they complain about that the conditions available in the crowded classrooms and larger cities which are not suitable for the application of the new system. One of the issues mentioned is as follows (Questionnaire 26:Bağcılar/İstanbul): *“However positive the system is, basic conditions (the word was underlined by the participant) are not suitable for the system. It is especially not suitable in larger cities and crowded classrooms. Solution for this problem is taking service to the people in order to prevent excessive (the word was underlined by the participant) class sizes. Though it is rather a late attempt, asking about the opinions of the educators through such a questionnaire is a positive step forward. I hope that the results and findings of this questionnaire become effective in the future regulations.”* Findings of this research overlap with the findings of the research carried out by Geijsel and others (2001) that state “teachers’ level of undertaking professional activities effect their participation in qualification policies and their level of teaching according to qualification structure policies”. Considering teachers’ opinions related to the changes and including them in the decision-making processes enables teachers to teach in accordance with the change. According to Jonassen and Murphy (1999) -carrying out researches on designing constructivist learning environments- activity theory as a frame considers as a basis that the epistemic assumptions of constructive learning are different from those of traditional instruction in designing learning environments. So, classical methods of needs and task analysis are inappropriate for designing constructivist learning environments (CLEs). Thus, Jonassen and Murphy (1999) argue that activity theory provides an appropriate framework for analyzing needs, tasks, and outcomes for designing CLEs. Most of 408 teachers indicate that; (1) they were not informed about the new system, (2) they are concerned that they can not inform children and parents as they think they are not well equipped and informed about the system, (3) they have concerns whether the program will be successful or the goals of the program will be achieved or not. The important point here is that; teachers indicate their concerns related to the new program in the margins of the questionnaire (right, left and bottom margins of the pages) although they were not asked to give such extra information through –in a way- mini compositions.

CONCLUSION

As for suggestions for the further research; for the future practices of National Education Ministry, teachers ask for in service training programs related to new curriculum. In this context, the plans made related to constructivist approach and teacher training during and for the in-service training programs designed by National Education Ministry can be researched, and whether these practices cause differences in teachers’ attitudes towards new program can be depicted. The data to be collected through qualitative and quantitative researches about crowded classes, low income areas and interviews with the teachers working in problematic areas are considered as valuable for the rehabilitation process.

REFERENCES

- Baki, A., & Gökçek, T. (2005). Türkiye ve Amerika Birleşik Devletleri’ndeki ilköğretim (1-5) program geliştirme çalışmalarının karşılaştırılması. *Kuram ve Uygulamada Eğitim Bilimleri*, 5(2), 557-588.
- Büyüköztürk, Ş. (2003). *Sosyal bilimler için veri analizi el kitabı istatistik, araştırma deseni, SPSS uygulamaları ve yorum*. Ankara: Pegem A Yayıncılık.
- Bobic, M., Davis, E., & Cunningham, R. (1999). The kirtan adaptation-innovation inventory: validity issues, practical questions. *Review of Public Personnel Administration*, 19(2), 18-31.



Certo, S. (2000). *Modern management diversity, quality, ethics & the global environment*. London: Prentice Hall International.

Christou, C., Menon, M. E., & Philippou, G. (2004). Teachers' concerns regarding the adoption of a new mathematics curriculum: An application of cbam. *Educational Studies and Mathematics*, 57, 157-176.

Daft, R. L. (1983). *Organization theory and design* (6.th Edition). USA: Vanderbilt University.

Demirel, Ö. (1992). Türkiye’de program geliştirme uygulamaları. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi*, 7, 27-43.

Drucker, P.F. (1994). *Kapitalist ötesi toplum* (Çev: Belkıs Çorakçı). İstanbul: İnkılap Kitabevi.

Erturgut, R. (2000). *Örgütsel değişimde dönüştürücü liderlik davranışları üzerine bir uygulama*. Yayımlanmamış yüksek lisans tezi, Osman Gazi Üniversitesi Sosyal Bilimler Enstitüsü, Eskişehir.

Geijsel F., Slegers, P., Berg, R., & Kelchtermans, G. (2001) Conditions fostering the implementation of large-scale innovation programs in schools: Teachers' perspectives. *Education Administration Quarterly*, 37(1), 130-166.

Gry J. I., & F. Stark. (1988). *Organizational behavior, concepts and applications*. USA: Merril Publication.

Güzel, E. B., & Alkan, H. (2005). Yeniden yapılandırılan ilköğretim programı pilot uygulamasının değerlendirilmesi. *Kuram ve Uygulamada Eğitim Bilimleri*, 5(2), 385-420.

Herold, D. M., Jayaraman, N., & Narayanaswamy, C. R. (2006). What is the relationship between organizational slack and innovation? *Journal of Managerial Issues*, 18(3), 372-392.

Hurst, D. K. (2000). *Kriz ve yenilenme* (Çev: Ela Gürdemir). İstanbul: Alfa Yayınları.

Hussey, D. (1997). *Kurumsal değişimi başarmak* (Çev: Tülay Savaşer). İstanbul: Rota Yayınları.

İnançoğlu, E. (2002) Çalışma değerlerinin örgütsel değişime dirence etkisi. *10.Ulusal Yönetim ve Organizasyon Kongresi*. www.akdeniz.edu.tr/iibf/dergi/Sayi04/14Yonorg.pdf [02.10.2007].

Jonassen, H. D., & Murphy, J. R. (1999). Activity theory as a framework for designing constructivist learning environments. *ET & D*, 47(1), 61-79.

Karadağ, E. (2007). Yapılandırmacı öğrenme ile ilgili öğretmen yeterliği ölçeği'nin geliştirilmesi: Geçerlik ve güvenilirlik analizleri. *Kuram ve Uygulamada Eğitim Bilimleri Dergisi*, 7(1), 153-175.

Knutson, J. (2001). *Project management for business professionals: A comprehensive guide*. New York: John Wiley & Sons.

Osborne, J. W., & Costello, A. B. (2004). Sample size and subject to item ratio in principal components analysis. *Practical Assessment, Research & Evaluation*. <http://PAREonline.net/getvn.asp?v=9&n=11> [12.04.2009].

Senge, P. (2000). *Beşinci disiplin: Öğrenen organizasyon düşüncüsü ve uygulaması* (Çev. Ayşegül İldeniz ve Ahmet Doğukan). İstanbul: Yapı Kredi Yayınları.

Tavşancıl, E. (2002). *Tutumların ölçülmesi ve SPSS ile veri analizi*. Ankara: Nobel Yayın Dağıtım.

Tezbaşaran, A. A. (1997). *Likert tipi ölçek geliştirme kılavuzu*. Ankara: Türk Psikologlar Derneği Yayınları.

Westerman, G., McFarlan, F. W., & Iansiti, M. (2006). Organization design and effectiveness over the innovation life cycle. *Organization Science*, 17(2), 230-238.

http://ilkogretimonline.org.tr/vol5say1/yenimufredat_raporu%5B1%5D.pdf “Yeni öğretim programlarını inceleme ve değer endirme raporu” [12.03.2009].