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Full Length Research Paper

EFL teachers' self-initiated professional development: Perceptions and practices

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This study assessed perceptions and practices of secondary schools (Grade 9-12) EFL teachers' self-initiated professional development. A questionnaire of likert scale items and open-ended questions was used to gather data from thirty-two teachers. The teachers were asked to fill out the questionnaire at Bahir Dar University during their registration for pursuing their second degree in English education. The collected data were analyzed in the form of descriptive statistics and thematic analysis. The findings revealed that despite insufficient practices, the teachers had clear consensus on the need for employing self-initiated professional development at their working environment. There seemed to have more awareness of self driven professionalism with a few practical experiences in their work places. Their school management problems, limited learning facilities and discouraging traditions of self improvement created pressure on teachers' implementation of the self initiated professional development.

Key words: Self-initiated, professional development, EFL teachers' development.

INTRODUCTION

Second/foreign language teachers' professional development has shown a shift of formal institutionalized based practices to individual driven activities where teachers are assumed to engage in careerism (self learning, evaluating and reflecting). More responsibility of professional improvement has been given to the teachers themselves with the assumption that individuals could identify their own learning needs and more interested in taking actions when they are accountable for their own professional development. A self-initiated professional development generally refers to a "process in which a learner assumes primary responsibility for planning, implementing, and evaluating the learning process where an education agent or resource often plays a facilitating

role in the process" (Guskey, 2000:57). That is, with some guidance and coordination roles of their institutions or schools that teachers are required to identify their needs of professional improvement, design strategies of self-development and take actions accordingly.

Richards and Farrell (2005) also note that teacher education has shifted its focus from institutional and managerial dominated fashion to individual teachers' self-directed process where provision of resources and materials of self-improvement are ensured in consultation with the institution and management bodies. The ultimate goal of educating teachers is not only helping them master the scientific concepts of teaching and learning the second/foreign languages but also enabling them to

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make use of the skills and knowledge they have gained in actual classroom instructions. For example, Darling-Hammond and Bransford (2005:359) argue that teacher education must lay the foundation for life-long learning, with the ultimate goal of “helping teachers become professionals who are adaptive experts”. Adaptive experts refer to people who are able to master the skills and strategies to plan, manage, carry out, and assess the activities of teaching and learning while at the same time adapting and adjusting to the complexities that are embedded in those activities in order to make sound instructional decisions within the contexts in which they teach.

Teachers, in the self-initiated professional development approach, are expected or required to ask for assistance from institutions and colleagues starting from planning areas of improvement up to evaluating whether the teachers bring about the intended professional improvement (Texas Education Agency, 1997). Murray (2010) emphasized the role of collegial cooperation and collaboration for individual teachers’ personal professional improvement where more confidence and determination of learning emerge. Teachers, thus, usually employ the self-initiated professional development in different ways like reading a journal article of a teacher’s interest, conducting a mini classroom research. Self-monitoring is also a starting point for professional improvement endeavors (Sparks and Louks-Horsley, 1989). An EFL teacher in South Korea was reported in using her own writing lessons observations as means of promoting her effectiveness in writing lesson delivery (Richards and Farrell, 2005; Bailey et al., 2001). The same authors also mentioned teacher support groups established by EFL teacher in Seoul, South Korea for professional upgrading. Besides, keeping journal writing for developing aspects of teaching techniques by an EFL teacher in Japan and another EFL teacher in Thailand were observed. Even, conducting an action research for solving immediate classroom instructional problem has become a common practice of EFL teachers who are curious and interested in self-initiated professional development (Ribeiro, 2002).

Using a variety of self-initiated professional development strategies for effective professionalism has been well acknowledged and practiced in many parts of EFL teacher education. As far as this reading is concerned, the status of self-initiated professional development of EFL teachers in Ethiopia seems to be known. Whether the teachers are aware of the significant role of the self-initiated professional development in professional upgrading has not yet been well known in the country.

Objectives of the study

This study aimed at addressing the following objectives.

1. To examine high school EFL teachers’ understanding

about the self-initiated professional development

2. To assess whether the teachers are employing the self-initiated professional development activities in their career

METHOD

Design

As it is mentioned in the preceding section, this study intended to see high school EFL teachers’ awareness and practices of self-initiated professional development in their day to day professional work. The study is, thus, a kind of descriptive survey of limited scope. It has only thirty-two participants (high school EFL teachers) and a questionnaire based instrument of closed ended and open ended items.

Participants

The current study involved thirty-two EFL teachers from ten high schools of the country. The teachers were selected from their respective high schools. They were asked conveniently to fill out the questionnaire at Bahir Dar University during which the teachers were applying for graduate program study (TEFL). Therefore, all of the teachers had a BA/Bed degree in English teaching. They also had three to twenty years of teaching experience at high schools. The teachers had more experience of teaching large classes having 40 to 60 students in a class. Thus, the thirty-two EFL teachers were asked to fill out the survey at the time of their application to the university for further education.

Instrument and procedures of data analysis

This study employed a questionnaire that focuses on the nature of self-initiated professional development. The questionnaire had two basic parts. Part one includes general information about the participants’ educational and work experience. While part two presents theoretical roles and practical experiences of the self-initiated professional development in EFL contexts. This part had two kinds of items, one of which is closed ended and the other is open ended. The items were designed based on reviews of literature on self focused or /and personal based EFL teachers’ professional development (Richards and Farrell, 2005).

The questionnaire was administered to individual EFL teachers while every teacher was physically applying to Bahir Dar University registrar office for graduate program. The participants took two to five days to return the filled in questionnaire. Since the sample size was too small, the collected data were analyzed using descriptive statistics, and responses of open ended items were analyzed thematically so as to substantiate the results of the statistics.

RESULTS AND DISCUSSION

As Figure 1 shows, the teachers’ mean response to each item clearly indicated their agreement to the need for practicing self-initiated professional development activities and opportunities in their career. For example, the teachers strongly acknowledged the statements that reflect the importance of updating themselves with existing professional skills and competence, developing

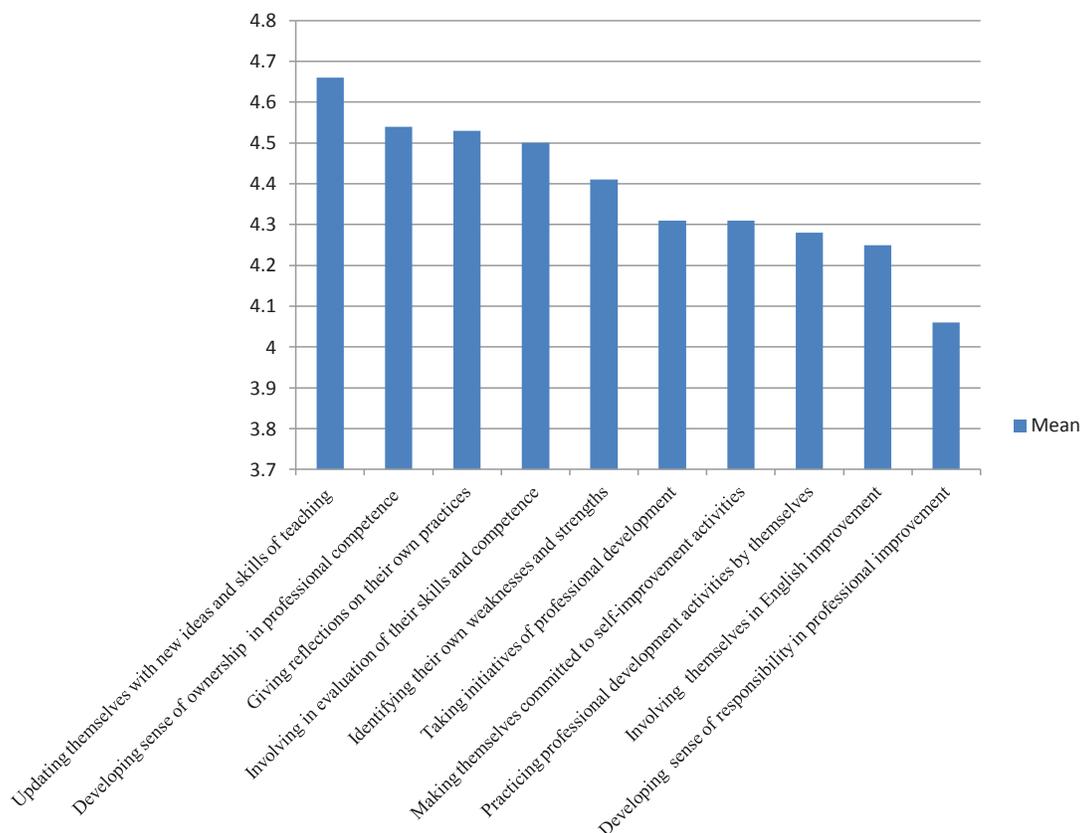


Figure 1. Teachers' perceptions about the self-initiated professional development.

sense of ownership in their professional competence and giving reflections on their own practices (Mean 4.65; Mean, 4.54 and Mean, 4.53). Such consensus on the significant role of self-initiated professional development for achieving higher professional competence could be taken as a valuable ground for practicing different tasks and activities that demand the teachers' initiative in professional upgrading.

Moreover, in the open-ended questions, the teachers expressed their positive feelings towards employing self-initiated professional development, and they noted that other stakeholders should encourage the teachers' endeavor for successful implementation. The teachers, however, reminded that some kind of incentives and modes of appraisal (e.g. salary increment and letter of acknowledgement) should be given to those who succeeded in achieving the required level of professional competence through their personal effort and initiative. However, the teachers did not seem to be consistent in their responses to the inquiries of employing the self-initiated professional development tasks and activities at their work.

As Figure 2 shows, the teachers reported having frequent practices of a few professional development activities such as speaking in their classroom lessons,

reading school textbooks, managing classrooms and planning their lessons (Mean, 3.93; Mean, 3.87; Mean, 3.75; Mean, 3.72 respectively). That is, the teachers reported that out of fourteen professional development activities only four were taken as their day-to-day practices along with their teaching career. On the other hand, more activities of the professional development (such as reading other books, magazines and publications; conversations with colleagues, listening to radio and watching movies) were not part of the teachers' actual self-training package.

The teachers' responses to the open-ended questions, however, contradicted this result that the teachers reported their frequent practices of the self-development activities (e.g., collegial sharing of ideas, reading different materials, participating in school language clubs and other related engagements). Therefore, there seemed to have some form of contradictions and inconsistencies in the teachers' responses of the closed-ended questions and the open-ended ones. That is, the teachers' responses to most of the closed-ended items revealed insignificant practices of the professional development activities, whereas the teachers' response to the open-ended items revealed their making use of professional development activities.

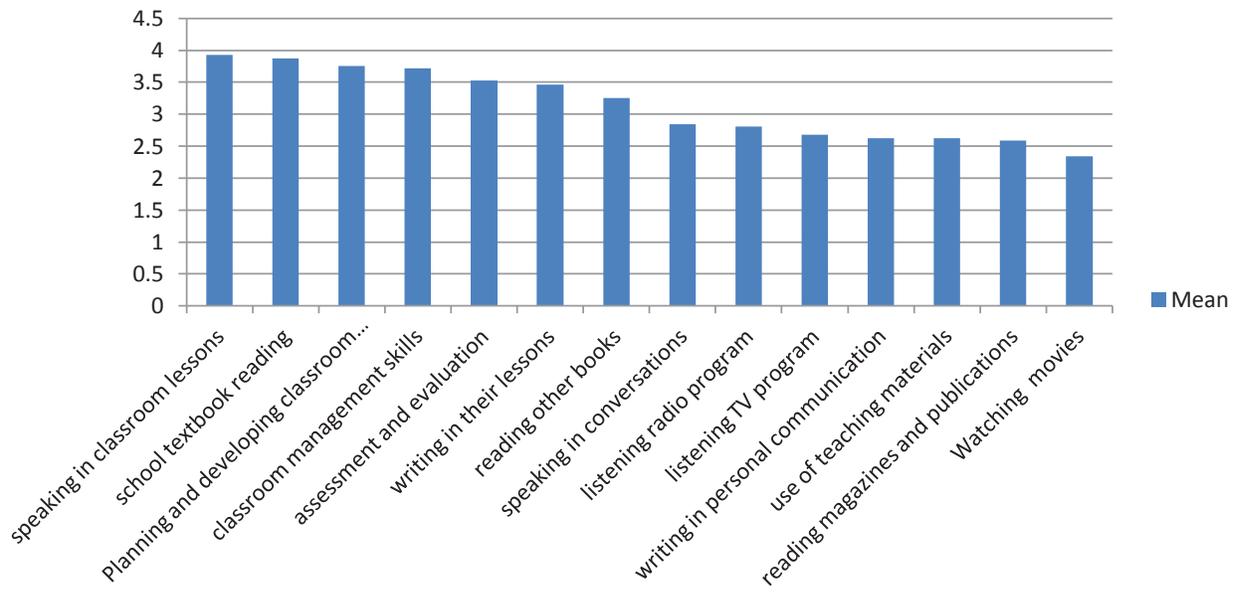


Figure 2. Teachers' practices of the self-initiated professional development

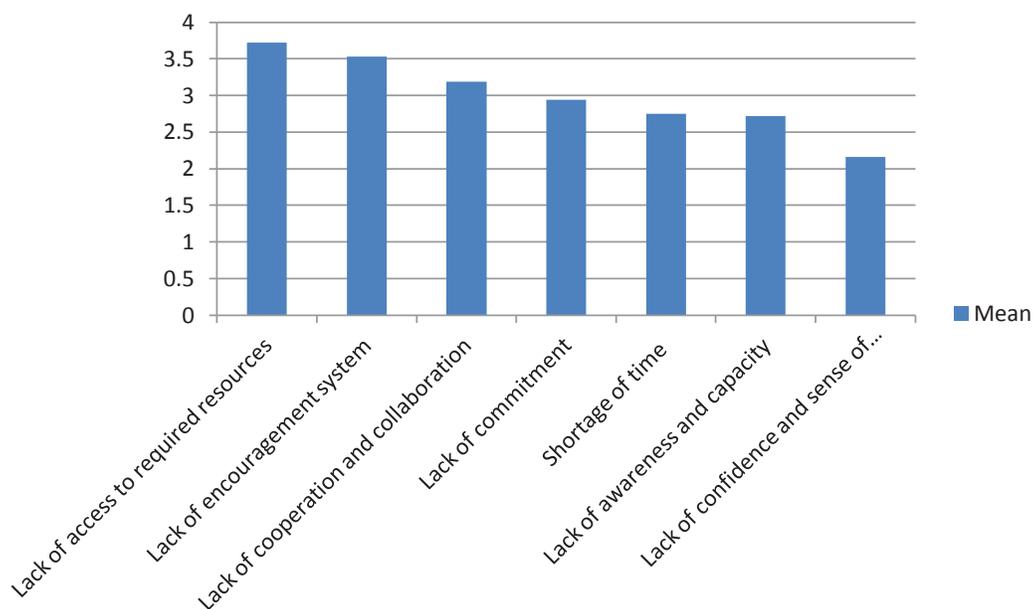


Figure 3. Factors affecting the teachers' self-initiated professional development.

Generally, given such inconsistent responses, the teachers' positive orientation of the self-initiated professional development activities, as it is shown in the preceding table, did not seem to be applied in their day-to-day professional work. That is, the teachers appeared not to apply the self-professional development tasks and activities that they felt were important for their professional skills and competencies.

As Figure 3 shows, the teachers' mean responses to

various factors affecting their self-initiated professional development revealed only on two factors i.e., lack of access to required resources and lack of encouragement system (Mean, 3.72; Mean, 3.53 respectively). The teachers do not seem to acknowledge more factors that hinder their self-driven efforts of professional improvement. For example, they do not acknowledge lack of commitment, awareness and capacity, self-confidence and shortage of time as obstacles of their self-driven

professional development practices. The teachers, thus, seem to emphasize their schools' limited resources provision and encouragement mechanisms as the major factors for conducting professional development activities.

The teachers, in their responses of open-ended questions, also show similar concerns in that the existing school management system and resources availability do not encourage them in undertaking their self-driven professional development activities. For example, they commonly stated three major challenges they face in employing the self-improvement activities at their work places. These were their schools' administrative systems, socio-cultural elements and inadequate resources and materials for practicing professional development.

DISCUSSION

This study results indicated that the teachers' concern of having self-initiated professional development activities appeared noticeable. They seemed to understand that teachers of English as a Foreign Language need to develop their profession through personally driven activities that can be undertaken at their work places. For example, the teachers rated more on the importance of updating themselves in their profession, doing self-evaluation and colleague based reflections of pedagogic effectiveness of their classroom activities in helping students achieve the intended objectives of teaching. They also noted that any form of self-initiated professional development practices had to be encouraged by incentives of salary increment and other related benefits. A similar study conducted at elementary school English teachers in Gaza (Herzallah, 2011), indicated that money and other forms of incentives like promotion and reward could affect the proper implementation of self-initiated professional development practices. Ahmed's (2003) study on secondary school EFL teachers' professional development also stated financial constraint as a major problem for employing self-driven professional development activities in their schools.

Surprisingly, the teachers in their self-reported practices of the self-initiated professional development did not confirm their implementations of the self-driven professional development during their career. The teachers, of course, revealed their higher mean responses to the factors affecting implementations like lack of resources and lack of encouraging school management. In their responses to the open-ended questions, they also noted that there were difficulties of accessing materials and resources required for personally driven professional improvement. Even, the existing school traditions hindered them from exercising self improvement in teaching and learning. These Justifications seemed to have considerable impact on their practices as they are working in one of the developing countries in the world. However,

the astonishing result for this study was non-reactive responses to their personal commitment as a factor exerting impact in their application of self-initiated professional development practices. That is, self-initiated professional development, by its own nature, demand teachers to be self motivated and committed regardless of the available backing and encouragement (Guskey, 2000).

CONCLUSION AND RECOMMENDATIONS

This study attempted to assess the teachers' conceptions about the role of the self-initiated professional development and the practical experiences they had in improving their professions. A few conclusions were drawn from the survey results.

1. The teachers seemed to be more conscious about the importance of self-initiated professional development. The participant teachers tended to acknowledge the significant roles that the self-driven activities and tasks of professionalism in bringing about real change on teachers' pedagogical effectiveness and efficiency.
2. The teachers appeared to decline on implementing personally driven professional tasks and activities during their day-day-to life, and
3. The teachers seemed to be less confident on the provisions of support and follow up from their schools and others concerned for carrying out the self-initiated professional development.

Therefore, for the teachers to involve in practical experiences of professionalism, not only preparing their working environment suitable but also helping the teachers recognize the challenges they have to face in doing professional development activities and tasks. That is, the teachers should be well aware of the risks and the required commitment of carrying out personally focused and motivated professionalism.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Assessing knowledge levels of secondary school physical education and sports teachers about inclusive education

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The purpose of the research is to assess knowledge levels of physical education teachers in inclusive education in secondary schools. For the research, the survey method was employed. It consisted of 55 physical education teachers employed in 47 secondary schools included in inclusive education program under Kocaeli Provincial Directorate of National Education. Field experts (faculty members) and the related general directorates were consulted for the face and content validity of the questionnaires used in a study by Varol (2010) to assess inclusion applications in primary schools and the teacher questionnaire developed as a result of these views was used following the adaptation process to physical education teachers. As a result of the study, it was concluded that physical education teachers employed in inclusive secondary schools did not have sufficient information about inclusion and needed further information, they did not get any information before inclusive education and did not have enough preparations for inclusion, they did not get any aid/support in inclusion applications, there were no special education teachers in inclusive secondary schools, inclusive students did not have sufficient supportive educational services, teachers did not adequately apply individualized education programs and there were no education materials.

Key words: Inclusion, inclusion applications, inclusive education.

INTRODUCTION

Disabled people, as others, have the right to social life, the establishment of interpersonal relationships, love and respect by others, and independent life without any need of anyone. This could only be provided through awareness of an integrated lifestyle in society. The basis of such awareness could be found with the help of inclusive education in educational institutions teaching students with special needs and normally developing peers in the same classrooms. Inclusive education is a

modern education system that is now largely accepted in Turkey, as in other countries in the world.

Inclusive education in our country is stated in Regulation of Special Education Services Decree Law no. 573 in the following way: "Education of those with special education needs is provided through eligible methods and techniques of any type and level in schools and institutions together with their peers in accordance with the developed individualized education programs

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(Vural, 2010).

Through a modern education perspective, inclusive education caters for educational needs of disabled students mainstreamed with those without any disorders, by providing students with special needs with education besides necessary special education support in regular classes (Babaođlan-Yılmaz, 2010; Konar and Yıldiran, 2012).

Inclusive education is an educational perspective which needs to be applied to all courses at all education levels from primary schools. It is rather essential to apply inclusive education in physical education courses. Inclusive education in physical education and sports gives regular students an opportunity to develop awareness of disabilities and support quick grasp of movements as disabled students set role models for regular students. To achieve this, physical education teachers need to be efficient in dealing with disabled pupils. Historically speaking, from the 90s to the early 2000s, "Physical Education and Sports for the Disabled" was an elective course in 56% of Schools of Physical Education and Sports in Turkey. Within the scope of "Restructring Faculties of Education Project" of Higher Education Board, the course became a 3 credit-compulsory course as of 2001 in departments of Physical Education and Sports Teaching of all Schools of Physical Education and Sports (Konar and Yıldiran, 2012). Later, "special education" was included in the curriculum as a compulsory course in Faculties of Physical Education and Sports Teaching, as in all teacher training faculties of education. Thus, preservice teachers were supported in that they were able to get to know students with special education needs better.

Including inclusive education in physical education and sports courses contributes to encouraging disabled students to do sports. Physical education and sports in the disabled prevents prospective health problems caused by a sedentary life style and also supports their physical, mental and social development. What is more, sports offers disabled people an opportunity to control feelings such as aggression, anger and jealousy naturally caused by both their moods as a result of disabilities and attitudes from the society towards them (Sonuç, 2012; İlhan, 2008; Çevik and Kabasakal, 2013). Sport activities done by disabled children increase their quality of life, entail integration with society and support their rehabilitations (Konar and Yıldiran, 2012). Sports in disabled people are needed not only for physical education courses at schools, but also for embracing a life style (Ian, 2004).

Disabled children, like all others, are provided with game based environments where they can express themselves and show their talents in physical education courses. Physical education and sports courses for disabled students have a great potential for the development of the disabled in that they include rich, interesting and exciting movements such as running, jumping, bouncing and leaping and both individual and

team games. Physical education courses serve a critical function by offering an opportunity to gather such people with healthy individuals in view of inclusion desirable in special education (Özer, 2013).

Physical education teachers will become more aware of adaptation according to the types of failure, support and levels of children with special education needs in physical education courses, and thus will become more efficient in course planning (Morley et al., 2005).

The purpose of the study is to explore levels of knowledge of secondary school physical education teachers about inclusive education.

METHODOLOGY

In this section, the research model, population and sample, data sources, data gathering methods and processing and statistical techniques in the research are mentioned.

Collection of data

The study used the survey method to explore levels of knowledge of physical education and sports teachers in inclusive education schools about the current inclusive applications. The survey method is a research approach that aims at a realistic representation of the previous and current case (Karasar, 1995).

The population of the research consisted of 108 physical education teachers employed in 95 inclusive secondary schools in Kocaeli Province. The sample of the study consisted of 55 physical education teachers who were employed in 47 schools and chosen by simple random sampling from the neighborhood.

"Inclusive Education Teacher Questionnaire", developed by Varol (2010), was used as the data gathering instrument. During the questionnaire development by the author, field experts (faculty members) and the related directorates were consulted for the face and content validity.

"Inclusive Education Teacher Questionnaire", used in the study, was applied to 55 physical education teachers by the author through face to face interviews.

Analysis of data

Statistical analysis of the obtained data was performed using SPSS 18. Frequency and percentage were employed in statistical data analysis.

RESULTS

58.2% of the participants of physical education teachers were males and 41.8% were females. According to the questionnaire results, the number of the male teachers was higher than the female ones.

5.5% of the physical education teachers participants had associate degree, 60%, university degree and 34.5%, master's degree. Most of the participant physical education teachers were university graduates.

Distribution of the participants of the physical education teachers according to seniority is as follows: 10.9%, 5 years and below; 16.4%, 6-10 years; 16.4%, 11-15

Table 1. Distribution of types of handicaps in inclusive schools.

	N	%
Visual disability	21	7,64
Learning difficulty and mental disability	167	56,78
Hearing disorder	10	3,4
Attention deficit and hyperactivity	56	19,75
Orthopedic disability	14	4,80
Autism	12	4,48
Motor speech disorders	9	3,17
Total	289	100

* More than one option can be marked.

years; 16.4%, 16-20 years; 32.7%, 25 years and above.

Distribution of disabled students (Table 1); sports teachers apply inclusive education as follows: visual impairment (7.64%), learning difficulty or mental deficiency (56.78%), hearing disorders (3.4%), attention deficit and hyperactivity (19.75%), orthopedic disability (4.80%), autism (4.48%) and motor speech disorders (3.17%). According to the research results, it can be said that those with learning difficulties and mental deficiencies are mostly included in inclusive education.

32.7% of the participant physical education teachers were trained in inclusive education whereas 67% were not. This shows most of the 55 physical education teachers included in the study were not trained in inclusive education (Table 2).

28.17% of the physical education teachers took sports courses; 15.55%, special education courses at university; 18.74%, special education courses during master's degree; 21.87%, inservice training of MoNE; 15.7%, courses in other educational institutions.

As for inclusive education training demands, 56.6% of the physical education teachers stated that they were eager to attend training, 10.9% said they could partly attend and 32.2% said they did not want to attend any. It could be suggested that more than half of the physical education teachers were eager to attend inclusive education trainings (Table 3).

The following are the specific aspects which the physical education teachers need to learn in inclusive education training: pre and post inclusion preparations (16.37%), types and features of failure (12.62%), individualized education program development (16.4%), application of special education programs (6.93%), teaching methods and use of materials (11.55%), classroom management techniques (4.62%), behavioral change provoking methods and techniques (11.55%), cooperation with parents (5.49%), information giving methods in classrooms for students (7.7%), social skills gain (9.31%), use of leisure time (3.95%). It could be suggested that physical education teachers are eager to attend training particularly for pre and post inclusion

preparations.

45.5% of them were informed before inclusion while 54.5% were not. We may conclude that more than half of the physical education teachers were not informed before inclusive teaching started (Table 4).

The physical education teachers considered information sources in inclusive education as follows: directorates of national education (36.58%), parents (24.96%), school counseling services (15.42%), special education services (9.6%), counseling and research centres (9.6%). When the research results are considered, it can be said that information sources are mostly directorates, parents and school counseling services respectively (Table 5).

Before inclusive education training, the teachers were informed about failure of students (33.65%), student needs in consideration with their developmental level (30.62%), educational arrangements (20,88%) and individual features in inclusive education (14.85%).

The percentage of the physical education teachers who needed to be informed about inclusive students in their classes was 69.1, while the percentage of those who did not want such information was 30.9. This case reflects most physical education teachers would like information about inclusive education (Table 6).

Distribution of the physical education teachers' information preferences is as follows: 25.02% of the information from school administrators, 23.94% from parents, 22.65% from school counseling services, 11.54% from special education institutions, 10.34% from counseling and research centres and 6.3% from others. Most of the teachers preferred information from school administrators, parents and school counseling services (Table 7).

As for information about inclusive education during training, the teachers preferred the following: information about disabilities of students in inclusive education (38.67%), information about developmental features and needs of students in inclusive education (25.42%), information about arrangements during education (27.93%) and other educational aspects (7.98%). In the light of this data, it can be said that physical education teachers would like information particularly about disabilities of inclusive students (Table 8).

For inclusive education preparations, the physical education teachers studied the following at the beginning of the academic year: meeting parents and getting information about students (23.02%), getting information from counseling and research centres (21.56%), making physical arrangements in physical education areas (10.8%), informing regular students about attitudes towards the disabled (16.2%), informing parents about inclusive students in physical education courses (6.32%) and preparations for the participation of the disabled (6.32%). According to this result, it can be said that physical education teachers attach importance to meeting parents, making cooperations with classroom teachers and making regular students aware of disabled peers.

It was observed that the physical education teachers

Table 2. Distribution of the types of inclusive education training.

	N	%
I took a sports course for the disabled.	9	28,17
I took special education courses at university.	5	15,55
I took special education courses during master's degree.	6	18,74
I attended inservice training of MoNE (Ministry of National Education).	7	21,87
I took private courses for the disabled.	5	15,7
Total	34	100

*More than one option can be marked.

Table 3. Distribution of specific aspects in inclusive education training to meet teacher information needs

	N	%
Pre&post inclusion preparations	21	16,37
Type and features of failure	16	12,62
Developing individualized education programs	9	6,93
Application of teaching programs	13	10,01
Teaching methods and use of materials	15	11,55
Classroom management techniques	6	4,62
Behavioral change provoking methods and techniques	15	11,55
Cooperation with parents	7	5,49
Information giving methods in classrooms for students	10	7,7
Social skills gain	12	9,31
Use of leisure time	5	3,85
Total	129	100

*More than one option can be marked.

Table 4. Informing about students in inclusive education.

	N	%
Provincial/District directorate of national education	19	36,58
Parents	13	24,96
School counseling services	8	15,42
Special education institution	5	9,6
Counseling and research centre	5	9,6
Other	2	3,84
Total	52	100

*More than one option can be marked.

Table 5. The subjects of informing.

	N	%
Information about disabilities of students in inclusive education	15	33,65
Information about developmental features and needs of students in inclusive education	14	30,62
Information about arrangements during teaching&education	9	20,88
Other education materials etc.	6	14,85
Total	44	100

*More than one option can be marked.

Table 6. Obtaining information about the preferences of inclusive education.

	N	%
School principal	20	25,2
Student's family	19	23,94
School counseling services	18	22,68
Special education institution	9	11,54
Counseling and research centre	8	10,34
Other	5	6,3
Total	79	100

*More than one option can be marked.

Table 7. The preferences about getting information in inclusive education.

	N	%
Information about disabilities of students in inclusive education	29	38,67
Information about developmental features and needs of students in inclusive education	19	25,42
Information about arrangements during teaching&education	21	27,93
Information about teaching equipment to be used	6	7,98
Total	75	100

*More than one option can be marked.

Table 8. The preparation done at the beginning of academic year.

	N	%
Meeting parents and getting information about students	18	23,2
Getting information from counseling and research centres about students	12	16,2
Making physical arrangements in physical education areas	8	10,8
Group cooperation with inclusion classroom teachers	16	21,56
Informing regular students in inclusion classrooms about attitudes towards the disabled	12	16,2
Informing parents about inclusive students in physical education courses	5	6,32
Exploration of student movement needs	5	6,32
Total	76	100

*More than one option can be marked.

informed others about inclusive students in their classrooms at a high rate of 60 per cent, but they did not give such information at a rate of 40 per cent. Accordingly, it can be said that physical education teachers highly inform other classroom teachers but not sufficiently.

The physical education teachers were informed about inclusive students by (43.6%) classroom teachers, school counselors (27.3%), special education teachers (9.1%) and other sources such as parents and surrounding people (10.9). On the other hand, it could be said that they are mostly informed by classroom teachers.

The physical education teachers needed information about inclusive education in these aspects: students'

individual differences (43.6%), cooperation between students (40%) and other issues (16.4%).

The physical education teachers stated that, during inclusive education of inclusive students in their classrooms, they were supported (29.1%), but they did not get any support at a high level (70.9%). Accordingly, we may suggest they do not get enough support to help inclusive education (Table 9).

For inclusive education, physical education teachers are supported by special education teachers in schools (20.74%), school counseling services (41.28%), counseling and research centres (10.32%), private special education institutions students attend (20.64%). As a result, it can be said that they get information about

Table 9. Data about aid/support giving individuals/institutions in inclusive education.

	N	%
Special education teacher in the institution	6	20,74
School counseling services	12	41,28
Counseling and research centre (CRC)	3	10,32
Special education institution students attend	6	20,64
Student connections/house mates	2	6,88
Total	29	100

*More than one option can be marked.

Table 10. Support preferences in inclusive education.

	N	%
Teaching methods	13	23,6
Teaching materials	8	14,5
Facility arrangements in physical training areas	8	14,5
Participation of inclusive students in physical activities	11	20,0
Total	40	100

*More than one option can be marked.

Table 11. Preferences about students' education support.

	N	%
In a resource room/supportive education room	10	20,4
In class aid (by a special education teacher etc.)	12	24,48
In a counseling and research centre	15	30,50
In a special educational institution	10	20,54
Other places (with life coaches and tutors and so on)	2	4,08
Total	49	100

*More than one option can be marked.

inclusive education generally from counseling services (Table 10).

Support requiring aspects are as follows: teaching techniques (23.6), educational materials (14.5%) and physical arrangements in sports training areas, (20.0) and participation of inclusive students in physical activities. We could think that physical education teachers need support in teaching techniques and participation of inclusive students in physical activities.

29.1% of the schools where the physical education teachers were employed had special education teachers, but 70.9% did not. As a result, we may say that the number of special education teachers to support inclusive education in schools is considered insufficient.

90.9% of the schools where the physical education teachers were employed had counseling services while 9.1% did not have any.

81.8% of the counseling services of the schools where the physical education teachers were employed provided counseling support whereas 18.2% of them did not. Most counseling services provide support (Table 11).

The teachers explained that inclusive students in schools were largely supported at a rate of 52.7 per cent, but they were not supported at a rate of 47.3 per cent.

Supportive student education is provided in a resource room/supportive education room (20.4%), in class (24.48%) (with the help of a special education teacher etc.), counseling and research centres (30.50%), special education institutions (20.54%) and others (with life coaches and tutors and so on) (4.08%). Thus, we may safely arrive at the conclusion that most inclusive students get help from CRCs and in classes.

The teachers stated they had preparations for individualized education programs in inclusion classes at a

Table 12. Curriculum practices.

	N	%
Frequent repetitions	28	24,92
Additional teaching material development	20	17,8
Encouraging student participation	24	21,56
Assigning supportive exercise programs as reinforcers	19	16,95
Dealing with students in their leisure time	21	18,77
Total	112	100

*More than one option can be marked.

Table 13. Preferences of cooperation with parents.

	N	%
I inform mother and father.	27	34,60
I regularly interview with mother and father.	11	14,12
I share student's progress with parents.	18	28,08
I inform parents about possible home activities.	19	24,34
I give information to those who coach free sport activities.	3	3,86
Total	78	100

*More than one option can be marked.

Table 14. The reasons for not collaborating with students' family.

	N	%
I have no time.	11	24,87
The family has no time.	12	26,85
The family is unwilling.	15	33,55
Parents are indifferent to their children	6	14,73
Total	44	100

*More than one option can be marked.

rate of 47.3 per cent and did not have any at a rate of 52.7 per cent. Hence, it can be said that a critical number of physical education teachers do not provide sufficient individualized education programs (Table 12).

The physical education teachers stated they tried the following ways in educational programs of inclusion classes they taught: frequent repetitions (24.92%), use of additional teaching materials (17.8%), encouragement for participation (21.56%), supportive exercise programs as reinforcers (16.95%) and dealing with inclusive students in their leisure time (18.77%). It can be said that teachers rather employ frequent repetitions in physical education programs and encourage participation.

The physical education teachers cooperated with generally families (67.3%), but they were not in cooperation at a rate of 32.7 per cent. One can think that they attach importance to cooperation with parents, but not sufficiently (Table 13).

It was observed that the physical education teachers cooperated with parents in the following ways: giving parents information (49.1%), regular parent meetings (20%), giving parents information about children's progress (32.7%), and giving parents information about home activities (34.5%); and there was also cooperation with free sport activities coaches (5.5%).

The reasons for non-cooperation with families are as follows (Table 14): teachers do not have time to deal with children (24.87%), parents do not spare time for cooperation (26.85%), they are unwilling to deal with their children (33.55%), and they are indifferent to their children's education (14.73%). Accordingly, it can be said that non-cooperative behaviors are mostly caused by indifferent and unwilling attitudes of parents towards children.

It was observed that the physical education teachers were supported by school administrators and other employees for inclusive education in schools at a very high rate of 69.1 per cent, but they were not supported at a rate of 30,9 per cent.

When attitudes of regular students in inclusion classes are considered, it is obvious that regular students are friendly at a very high rate (70.59%) (Table 15); they do not consider inclusive students as friends (5.87%), they occasionally receive inclusive students as friends (21.73%), and they never receive inclusive students as friends (1.81%). As a result, most students develop a sense of integration and tolerance.

As for effectiveness, 29.1% of inclusive education materials were found effective, another 29.1% were

Table 15. Other students' attitudes towards students of inclusive education.

	N	%
They are friendly.	39	70,59
They do not consider inclusive students as friends.	3	5,87
They occasionally receive inclusive students as friends.	12	21,73
They never receive inclusive students as friends.	1	1,81
Total	55	100

found ineffective and 41.8% were found partly effective. We can say that the number of educational materials in inclusive schools is not sufficient according to physical education teachers.

DISCUSSION AND CONCLUSION

This section presents results, discussions and recommendations according to the data obtained from the views of secondary school physical education teachers about the assessment of inclusive education applications.

Different types of failure that need inclusive education are also mentioned. In the study, it is clear from the types of failure that there are mostly inclusive students with learning difficulty, mental deficiency, and attention deficit and hyperactivity. In a study that assessed inclusive applications in primary schools, Varol (2010) explored that the most frequent disabilities of inclusive students were "learning difficulty and mental deficiency".

Most researchers suggest that teachers' knowledge, skills and attitudes in inclusive education process towards disabled children and inclusion play a crucial role (Sart et al., 2004, Türkoğlu, 2007; Gözün and Yıkmiş, 2004, Vural, 2010). The research concluded that 32.7% of the participant physical education teachers were trained in inclusive education whereas 67.3% were not. Dikici et al. (2011) showed that information need of teachers was caused by both personal incompetencies and the fact that they had not been offered enough special education courses and applications at university. Again, studies on inclusive education in various fields have mentioned teachers' lack of knowledge in inclusion (Güven and Çevik 2012).

The study showed that the physical education teachers had knowledge mostly because of graduate sports courses for the disabled (28.17%). In a study, Varol (2010) suggested most teachers were trained by attending inservice training programs of MoNE.

The study explored the following about inclusive education: 56.6% of the teachers would like to be trained, 10.9% would like to be partly trained and 32.2% would not like any training. In a research, as in our study, Vural (2010) showed most teachers (73.9%) would like to be trained in inclusive education.

In the study, the physical education teachers would like to learn about the following aspects: preparations during pre and post inclusion period (16.37%), the type and features of failure (14.62%), development of individualized education programs (6,93), special education applications (10.01%), teaching methods and use of materials (11.55%), classroom management techniques (4.62%), behavioral change provoking techniques (11.55%), cooperation with parents (5.49%), student information giving techniques (7.7%), social skills gain (9.31%). According to Vural (2010), the following are the five aspects of inclusive education that teachers need information about: "development of individualized education programs (IEPs)" (60.7%), "behavioral change provoking methods and techniques" (51.9%), "preparations during pre and post inclusion period" (47.9%), "social skills gain" (44.6%) and "teaching program applications" (43.4%).

In the study, it was seen that 45.5% of the physical education teachers were informed before education, but 54.5% were not, which made this clear that the physical education teachers did not have enough information about inclusive students in their classes. Informing teachers about the type and features of failure before and during inclusive education and doing preparatory activities make teachers understand inclusive students more easily and teach them more comfortably (Vural, 2010).

In the study, it was observed that the physical education teachers were informed about inclusive students by directorates of MoNE (36.58%), parents (24.96%), school counseling services (15.42%), special education institutions (9.6%), counseling and research services (9.6%). In a study, Vural (2010) explored teachers would like to be informed by counseling and research centres and school counseling services.

Teachers would like to be informed about arrangements to be made before inclusive education and during teaching process that are necessary for pupils' needs and developmental features and the type of failure. Necessary arrangements in physical education training areas by physical education teachers and material development are especially important to find out children who are disadvantageous in sports. For instance, children with down syndrome must avoid strenuous exercise and kinematic movements because of axial joints abnormalities and heart defects (Atlanta) and when

visual handicaps are considered, children with glaucoma must avoid exercises that increase intraocular pressure (Özer, 2013). In the study, the physical education teachers attached importance to meeting parents and getting information about children for preparations of inclusive education at the beginning of the academic year (23.947%). In Vural's study (2010), meeting parents and getting information about students ranked first.

In the study, the physical education teachers informed regular pupils about inclusive education and inclusion at a rate of 38.67 per cent. Batu (2000) suggests that children do not only learn from teacher-student interaction at school. A great deal of what they learn comes from student-student interaction.

In the study, the physical education teachers explained that they were rather supported by classroom teachers about inclusive students (43.6%). Special education teachers are obliged to make students with special education needs adapt to class, help teachers in their studies with pupils, do various activities with normal peers, teach classes and identify positive interactions between students (Kargin, 2004). The study showed that the number of special education teachers in inclusive schools where the participant physical education teachers were employed was very low.

It is essential to have counseling services in all educational institutions and particularly in inclusive schools and school counselors must provide support. The main function of counseling and guidance services (CGS) is to make students explore themselves and become aware of their personal traits, options and opportunities, become able to make realistic decisions and to develop potentials, deal with obstacles and problems they face and adapt to the environment (Güven, 2009). School counseling services and counselors, in cooperation with teachers, try to meet inclusive students' needs in schools where there are no special education teachers (Vural, 2010). The study showed that schools where the physical education teachers were employed had counseling services at a rate of 90.9 per cent, but did not have any at a rate of 9.1 per cent. At the same time, 81.8% of counseling services in those schools gave counseling support whereas 18.2% did not.

In the study, nearly half of the physical education teachers said inclusive students were not sufficiently supported. In a study, Vural (2010) stated that inclusive students were supported at a rate of approximately 67 per cent according to the teachers. In their study on adaptation of teaching by classroom teachers in inclusion classes, Vural and Yıkımlı (2008) found out that most inclusive education teachers were not supported by school administrators, directorates of MoNE, counseling and research centres and families.

Article 23/i of Regulation of Special Education Services (2006) stipulates that "Arrangements are made according to the type of failure, educational performance and needs of the pupils attending inclusion education by taking the

necessary steps in educational tools, appliances and materials, in educational methods and techniques, and in educational measurement and evaluation" (Vural and Yıkımlı, 2008). Teaching areas need to be physically arranged as physical education courses are performed outside in gyms or school yards. As for educational programs, the physical education teachers said they had preparations at a rate of 47.3 per cent, but most of them stated they did not (52.7%). In a study, Demirci et al. (2014) showed scientific development of physical education and sports teaching programs for those with special education needs in accordance with educational goals was not found sufficient and a teaching program needed to be feasible rather than attractive.

Koparan (2003) emphasizes physical education teachers need to choose apt and pleasant materials, have positive authority and introduce a reward system and a straight discipline perspective in class in order to maintain students' attention and enthusiasm and make sports attractive. Sports play an important role in integration, one of special education goals, by giving disabled people an opportunity to meet healthy people and others with failure (Civan et al., 2012). However, student disabilities in physical education require different model applications in education. Those in inclusion classes with learning difficulty and mental deficiency learn slowly and late and forget easily, so their skills can only be developed through frequent repetitions. The physical education teachers explained that they utilized frequent repetitions in teaching (24.92%) and additional educational materials (17.8%). Physically and visually handicapped children have difficulty in sports activities because of their disabilities so they are unwilling to participate. Physical education teachers may increase participation by making in class arrangements and methods especially developed for student disability. The study showed that the physical education teachers encouraged children to participate at a rate of 21.56 per cent. Leading an active life is not possible only through physical education. For this, physical education teachers need to make disabled students join in out-of-class sports activities. In the study, the physical education teachers stated that they provided additional exercise programs as reinforcers (16.95%) and they dealt with inclusive students in their leisure time (18.77%).

The study showed that the physical education teachers cooperated with parents at a very high rate (34.60%). It was observed in family cooperation that the physical education teachers informed parents about home activities (24.34%). It is impossible to think education without family support. Parents are not only the first teachers of children, but also partners of educators (Keçeli-Kaysılı, 2008).

Family enthusiasm in inclusive education has an important role in successful inclusive practices. Thus, involving parents as supporters in the process makes reinforcing things learned at school and home easier for

teachers (Batu, 1998). The following hinders inclusive education: insufficient time spared by teachers and families or unwillingness. The study concluded that lack of enthusiasm was mostly seen in parents.

Regular students' attitudes in class are important factors in inclusive education. In the study, it was seen that regular students in inclusion classes were friendly to students with special education needs.

Educational materials are effective (29.1%), educational materials are ineffective (29.1%) and educational materials are partly effective (41.8%). The results show that the number of educational materials for inclusion in physical education is insufficient.

The physical education teachers employed in inclusive secondary schools explained that they needed to be informed, they were not informed during pre-inclusion period and did not have enough preparations for inclusive education and get support/aid for inclusive applications, there were no special education teachers in inclusive secondary schools, inclusive students were not sufficiently provided with supportive education services, teachers did not sufficiently apply individualized education programs and there were no educational materials.

We need further inservice trainings in inclusive education for physical education teachers.

Physical education teachers must be encouraged to develop individualized education programs.

Special education teachers must be appointed to inclusive schools. There must be a variety of educational materials and additional materials must be given in consideration of teacher intentions. There must be a rollout of infrastructure for inclusive schools.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

The development of will perception scale and practice in a psycho-education program with its validity and reliability

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In this research, we aim to develop a 5-point likert scale and use it in an experimental application by performing its validity and reliability in order to measure the will perception of teenagers and adults. With this aim, firstly the items have been taken either in the same or changed way from various scales and an item pool including 61 items highly comprising significant and probable testing areas have been formed. This item pool has been applied in a sample of 238 students at Erzincan University in the first stage. The last form Will Perception Scale (WPS) including 18 items determined as a result of the item analysis based on total-item correlation and the comparison of extreme groups has been applied in a sample of 238 new participants. Personal Information Form has also been applied in the second sample group. With the aim of testing the validity of the scale, Kaiser-Meyer-Olkin (KMO), Bartlett Test, Principal Components Analysis and Varimax Rotation Method have been employed. To test its reliability, Cronbach Alpha coefficients according to the factors have been calculated. As a result of the applications, the scale is seen to meet the requirements of validity and reliability. The factor loads of the items vary between .79, 128 and .81, 540. The lowest item total correlation of 18 items is .79, 128 (mean $r = .80, 334$); t values of these items vary between 2.049 and .32, 744. While the internal consistence of 61 items in the pool is $\alpha = .891$, the internal consistence of 18 items in the scale is $\alpha = .918$. The results obtained with the techniques such as item analysis, pearson correlation and factor analysis prove that all the validity and reliability indicators are high and as expected in literature, the scale can show that the highness of psychological symptom level, the lowness of willpower skill and the highness of paranormal beliefs and external locus of control in willpower skill are interrelating.

Key words: Will, will perception, will training, control, control locus, education.

INTRODUCTION

Human is a creature that has superior abilities to other living beings. The superiority of human brings responsibility. His responsibility is based on his will (Akgüç, 2008:253). Human is a human with his will, not his

intelligence and knowledge. Intelligence and knowledge more or less exist in animals. However, will is morally a power and privilege peculiar to human who comprises the last ring of the chain of living organisms.

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Will is not only a power and privilege but it is also the only spiritual force differing people and creating the difference of superiority and inferiority among them (Başgil, 2009: 26).

Willpower can be defined as choosing and deciding and converting these choices to actions (Dökmen, 2000: 213). Will is defined as the thing known directly. In addition to this, the way to the apparent material world starts from it. Will is the key to everything. It is a narrow door to reality. We must understand the universe through our existence. People's wills appear in their bodies. This will brings forth intelligence in the brain and the continuity demand in body (Schopenhauer, 1962:25).

The theoretical and psychological requirements related with the term, will

Will in keeping life under control and willingness is discussed in psychology like that: Will (volition, willpower) is a term Rank uses as an integrative power of personality. Rank interpreted this term as the natural result of being born and an obligatory element for the development of a human organism (Geçtan, 1998:157).

Rank describes three developmental stages of willpower: (1) counter willpower - objection to a person's willpower (Yalom, 2001; Babayiğit, 469). A child learns to say no to his/her parents and own impulses with counter willpower. Rank says that willpower is determined as counter willpower (Geçtan, 1998:158). 2- positive willpower, a person's being ready for the thing to do, 3- creative willpower, a person's being ready for the thing (s)he wants to do (Yalom, 2001; Babayiğit,469). Rank has defined human as a living being who is conscious, purposeful, and able to make a choice and direct himself/herself (Geçtan, 1998:158).

Erikson also highlights the fifth psychosocial development stage "identity versus confusion" and identity. Erikson states that identity versus confusion stage is the stage where gains of previous four stages reappear, an individual think about these gains and (s)he tries to combine these gains with the society (s)he lives in (Arslan, 2008:3). Sense of autonomy which is the gain of the second stage and will can gain a place in personality within reliable relationships and disagreements during puberty (Dereboy, 1993 as cited in: Arslan, 2008:32).

As is seen, the term will comes to the fore in two stages of Erik Erikson. It is seen that a person starting to gain will in autonomy versus shame and doubt stage starts to form his/her personality in identity versus confusion stage

In existentialist approach, there are four main anxieties. These are necrophobia (fear of death), freedom, isolation and meaninglessness. The four main anxieties in question create anxiety and worry and people develop some coping mechanisms in order to cope with this anxiety. Fear of death, isolation-loneliness and finding no meaning in life can directly be a source of anxiety. What freedom means is that human is a willed creature who

can make free choices and take responsibility of them. How much freedom is used and how much responsibility a human takes afflict human (Dökmen, 2000: 50).

When the relevant literature above and the research done about will are analyzed, will is taken into account as an emotion in some sources (Berkowitz, 1963; Satre, 1965; Dökmen, 2000) while some researchers take it as a skill in others (Glover, 1970; Popkin, 1987; Chamberlin, 1994; Jenkins, 1994; Ellenburg, 2001). Some of them define it as a personality trait and characteristic (Yalom, 2001; Ruyter, 2002; Golzar, 2006).

Within this scope, developing a Will Perception Likert Scale which is more comprehensive than locus of control scales and whose structure has been determined is aimed in order to determine how a person's will affect choosing behaviour and deciding process while having a behavioral pattern and how (s)he uses it so that it can be used in the sample of university students at first.

In the second stage we aimed to check its feasibility with demographic variations of the scale with 18 items.

In the third stage we aimed to determine whether any change will be seen in those who got Will Education in Psiko-education Program after they get low score from the scale

METHOD

Sample

In the first stage of the research, the sample consists of 238 voluntary participants from the students in the departments of Psychological Counselling and Guidance, Theology, Mathematics, Economics, Public Administration, Mechanical Engineering and Electrical and Electronic Engineering at Erzincan University (Turkey). 151 of the participants are females, 87 of them are males and the average age of the whole group is 21.1. ($S=2.2$, $R_{anj}=17-28$).

Data collection tool

In this research, developing an extensive Will Likert Scale about what will is and what will is not is aimed. With this aim, a list has been formed by doing a broad literature search. Moreover, the questions "What is will for you?", "What is sense of will for you?" "What is a willed behaviour for you?" are asked to 238 voluntary participants in order to answer them. The answers given to these open-ended questions have been classified and 61 items have been formed.

It has been seen that 61 items in the scale have 5 groups of will. These are (1) Will and chance, (2) Will and destiny, (3) Will and justice, (4) Will and power, (5) Will and control belief. Therefore, it has been thought that the items determined for the pool and focus of will belief can represent all the fields of will researched in literature.

The scale items were formed in accordance with 5-point Likert format. The rating was done and graded as thus: "Totally disagree (1)", "Disagree (2)", "Agree sometimes (3)", "Agree (4)", "Totally agree (5)". 32 of the scale items were answered regularly and 29 of them were answered irregularly, and so no response bias. The scale was used with the instruction below.

With this survey, it is aimed to determine people's ideas about life. You are asked to state to what extent you agree with the ideas

presented in these items.

For this, please read each item carefully and state the degree of relevancy of the idea presented in that item with your ideas. It is enough to put a (X) sign into the box reflecting your idea among the alternatives opposite to each statement. There is no "True" or "false" answer.

Process

The application of the scale to the participants was done by the researcher during the course hours as groups. The participants were informed about the fact that they can ask questions about the unclear points in the items and these kinds of demands were met by the researcher.

FINDINGS

The scale was done for the experimental group for validity and reliability analysis. Firstly exploratory factor analysis was done over the data obtained from the scale for validity. The eigenvalue of the items is 1, the core values of the items are at least .30, the items are in only one factor and the difference among the factors in two factors is at least .10 in exploratory factor analysis while determining the items will be in the scale (Büyüköztürk, 2007). In addition to this, during validity analysis, 25 degree varimax rotation was done.

The concordance of item-factor structure obtained from exploratory factor analysis and model was tested with confirmatory factor analysis. The validity analysis of the scale was done with coefficient of internal consistence. In the research, SPSS 19.0 packaged program was used and co-efficient of internal consistence was determined in order to do exploratory factor analysis. Lisrel 8.7 packaged program was used in order to do confirmatory factor analysis. In the research, a control scale formatted Likert type was aimed. With this aim, item analysis was done in order to determine which items of the scale including 61 items are statistically functional. In this study, it was thought that it must be started with an item analysis prioritising the relationship between conceptual dimension which it measured and general scale score of each item (item total correlation). In this direction, for each item of the scale, item total correlation was calculated with *item delivery technique*. These correlations vary between 0.00 and 0.87 values. Furthermore, it has been analyzed whether each item distinguishes the group belonging to top 27% of the sample from the group belonging to bottom 27% of the total score significantly. For this, the scores of two groups in question have been compared with t test technique. As a result of this analysis, 17 items cannot distinguish the top and bottom groups significantly.

As a result of item analysis carried out in two stages, in addition to 17 items which cannot distinguish the top and bottom groups significantly, another 20 items whose total correlation is .50 or which are subtractive have been taken from the scale even if they can distinguish with

their relatively low t values. However, in the factor analysis done in order to test the validity of the scale, 4 factors are seen with principal component analysis in the unrotated factor analysis as a result of the analysis done without limiting factors in the will scale. As the amount of variance which can be explained with four factors is 49.2% and has difficulty in giving meaning to factors quite well and forming content integrity, the structure explaining 79.85% of variance with varimax vertical rotation technique by being limited with a single factor has been obtained as it must be a single factor for the scale's capability to prove the existence and absence of will. The factor loads of the items vary between .79, 128 and .81, 540. Therefore, the lowest item total correlation of 18 items has been .79, 128 (mean $r = .80$, 334); t values of these items vary between 2.049 and .32. 744. Furthermore, while the internal consistence 61 items in the pool is $a = .891$, the internal consistence of 18 items in the scale is $a = .918$. It has been thought that a new scale including 18 items and a really high reliability is obtained in this way. In the second stage of the research, the sample consists of 238 voluntary participants from the students in the departments of Psychological Counselling and Guidance, Theology, Mathematics, Economics, Public Administration, Mechanical Engineering and Electrical and Electronic Engineering at Erzincan University (Turkey). 151 of the participants are females, 87 of them are males and the average age of the whole group is 21,1 ($S = 2.2$, $Ranj = 17-28$).

In this stage of the research, Will Scale including 18 items whose functionality has been determined at the end of the first study has been used as a data collection tool. Again 5 point Likert scale has been graded regularly (the items graded irregularly have been eliminated). The ascent in scores reflects the highness of will and probable score range is among 18-90. Personal Information Form was applied to the sample and demographic attributes were obtained.

The statistical processes in the research are in order of exploratory factor analysis, confirmatory factor analysis and determining coefficient of internal consistence. For the validity of the scale, exploratory factor analysis was done over the scores obtained from the tyrant dimension. The pattern obtained as a result of exploratory factor analysis was tested with confirmatory factor analysis for both tyrant and victim dimensions. The findings are presented in order of statistical process.

Exploratory factor analysis

For the validity of *Will Perception Scale*, exploratory factor analysis is done at first. Firstly, in order to do this analysis, KMO test testing the sufficiency of the sample is done. KMO value is found as .84. According to Büyüköztürk (2007), it is concluded that the factor analysis can be done over the data obtained as this value is bigger than .70. Secondly, it is determined that a factor

Table 1. The results of factor analysis of will perception scale.

	Scale mean if item deleted	Scale variance if item deleted	Corrected item-total correlation	Squared multiple correlation	Cronbach's alpha if item deleted
1-1 A scrupulous person is the one who is responsible for his actions.	30,6008	81,540	,490	,294	,869
2-2 A person's selection power while deciding is called will.	30,4580	80,258	,558	,364	,867
3-4 Will is the ability of controlling a person's unending desires.	30,2017	80,280	,429	,239	,872
4-6 If a person can control herself/himself, s(he) is willed.	30,4958	79,331	,603	,434	,865
5-7 Will is the necessary one in order that a person can control herself/himself.	30,4076	81,112	,466	,255	,870
6-8 Will is a person's being truly attached to his/her decisions.	30,2647	79,993	,491	,300	,869
7-10 Will is the ability of making a choice.	30,2983	79,788	,502	,313	,869
8-11 A determined person is called a willed person.	30,3151	79,727	,508	,278	,868
9-13 A willed person is the person who has self-respect.	30,3655	80,284	,523	,343	,868
10-14 A self-control person is called a willed person.	30,2185	78,695	,516	,309	,868
11-16 Will is a personal quality formed by a person.	30,2689	81,379	,376	,176	,874
12-21 Will is the desire wished in order to perform an action.	30,2563	79,719	,499	,319	,869
13-22 Will is the ability of giving a decision without being affected by others	30,1513	79,825	,432	,221	,872
14-23 Will is a person's ability of controlling himself/herself.	30,5210	80,791	,485	,290	,869
15-28 Will is an internal quality controlling a person.	30,2059	79,422	,516	,292	,868
16-31 Will is the ability of being self-possessed (self-control).	30,3487	79,561	,504	,319	,868
17-34 Will is a person's being able to make right choices all the time.	30,1849	79,156	,477	,318	,870
18-40 Will is a person's being able to keep his/her desires at a certain level.	30,2941	79,128	,586	,382	,866

P<0.05.

analysis is suitable to be done as the data obtained by looking at the results of Bartlett Sphericity ($\chi^2 = 3470.59$, $p=.000$) vary significantly (Büyüköztürk, 2007). Varimax rotation (25) was done so that principal component analysis can be done at first in a way that the core values of 18 items in the factor analysis are 1. As a result of validity analysis, it has been found that the scale has a single factor structure Table 1.

When the whole scale including 18 items are taken into account, it demonstrates that the scale has a single factor structure. The factor load values of 18 items in the scale vary between 0.79 and 0.81. Single factor explains 79.85% of total variance in the scale. As a result of exploratory factor analysis, it has been found that the scale consists of 18 items and a single factor. These values show that the scale explains will well. The model concordance test of the values obtained and the structure has been analyzed with confirmatory factor analysis (Figure 1).

Confirmatory factor analysis

The scale including 18 items and a single factor was tested with confirmatory factor analysis. As a result of

CFA done, it is seen that all the factors explain will perception variable significantly when it is checked whether the factors determined explain will variable significantly. As a result of the analysis done, it is found that fit indexes are $X^2= 137.70$ ($sd=139$, $p=.00$), $X^2 / sd= 3.47$ RMSEA= 0.000, GFI= 0.94, AGFI= 0.93, CFI= 1.00, NFI=0.95 ve NNFI= 1.00 (Figure 2).

In order to determine the accordance of the models formed with confirmatory factor analyses and the data, the evaluation was done by looking through fit indexes such as X^2 (chi-square), RMSEA, GFI, AGFI, CFI, NNFI (Anderson and Gerbing, 1984). In this evaluation, it has been accepted that the accordance of the model with the data is perfect in the case that the rate of X^2/sd is 5 or less. The value of RMSEA is close to zero and less than 0.05, which shows that the accordance of the model with the data is perfect. However, the rate up to 0.08 can be accepted for the accordance of data. Besides, it shows that the accordance of the model with the data is perfect in the event that CFI and AGFI indexes are higher than 0.90. It has been accepted that 0.85 and higher for CFI and 0.80 and higher for AGFI are enough for the accordance of the model with the data (Anderson and Gerbing, 1984).

When fit indexes of the scale are analyzed, fit indexes

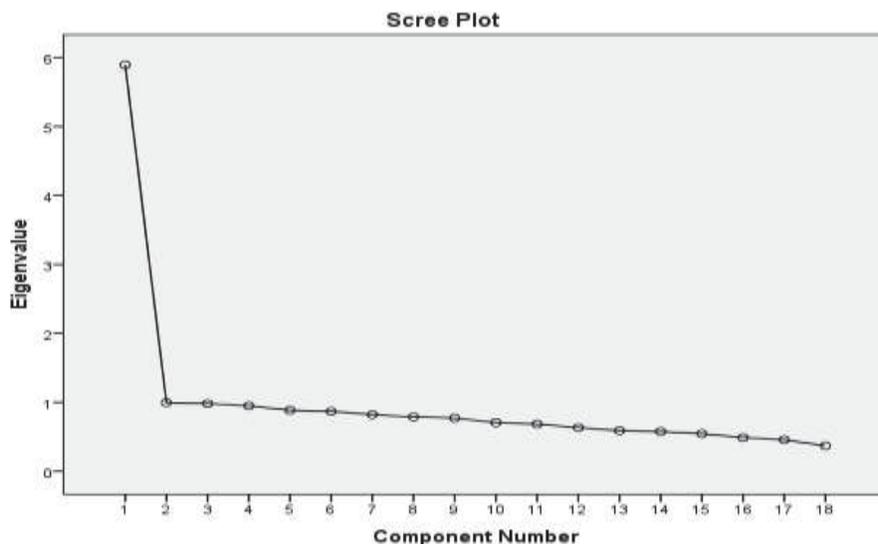


Figure 1. Scree-plot graphic factor structure.

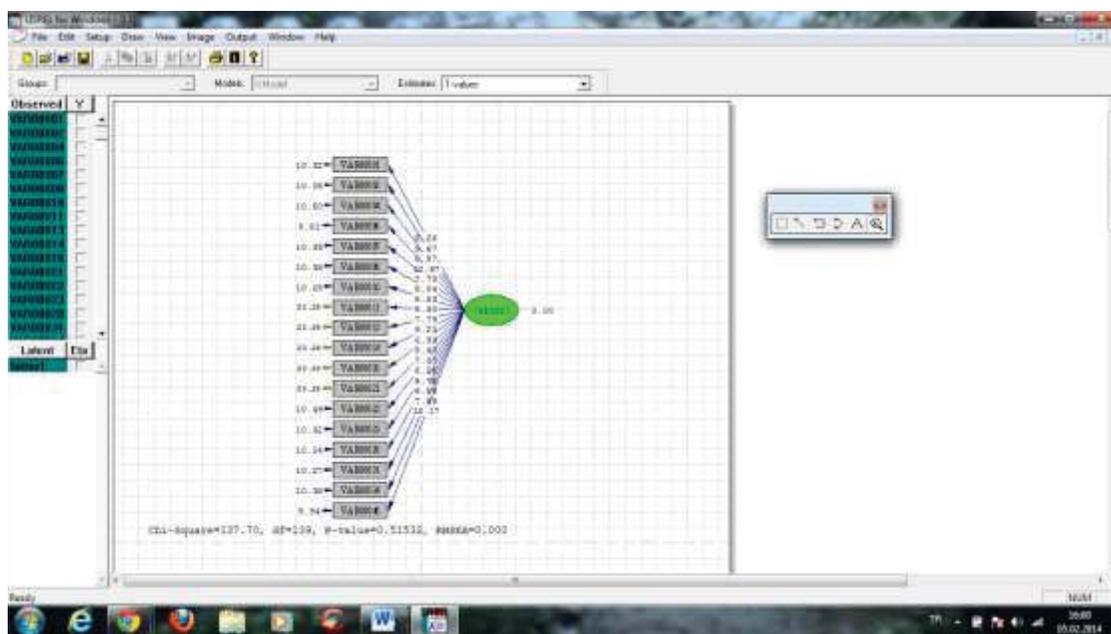


Figure 2. The CFA explanation rates and error variances of will perception scale.

are seen to be at an acceptable level. Based on these findings, the validity of the scale can be stated to be achieved. For reliability analysis of the scale, coefficients of internal consistency (alpha) have been calculated.

Coefficients of internal consistence

For the scale including 18 items and a single factor,

predictions of reliability have been obtained by testing their internal consistence. The 18- item total coefficient of internal consistence of will perception is found to be .81. It is regarded as an acceptable value for validity of the scale. The values obtained as a result of validity-reliability analysis show that it can be used in terms of the psychometric qualities of the scale.

The offer of Will Development Training has been given to 90 people who have taken low points from *Will Scale*

Table 2. Individual Will Perception In Terms of Psychosocial Qualities.

Question	Training Score of Experimental Group			Training Score of Control Group		
	N	X	S	N	X	S
1	41	3.80	1.0	79	2.96	1.27
2	41	4.02	1.13	79	3.04	1.43
3	41	6.61	1.32	79	2.90	1.40
4	41	4.27	0.92	79	3.44	1.41
5	41	4.19	1.08	79	3.08	1.39
6	41	3.54	1.25	79	2.88	1.38
7	41	3.87	1.19	79	2.98	1.46
8	41	3.81	1.23	79	2.69	1.31
9	41	3.61	1.09	79	2.67	1.21
10	41	4.07	1.10	79	2.94	1.46
11	41	4.01	1.15	79	2.93	1.36
12	41	4.17	1.11	79	2.86	1.28
13	41	3.75	1.28	79	2.70	1.23
14	41	3.53	1.38	79	2.66	1.40
15	41	3.74	1.11	79	2.51	1.42
16	41	4.09	1.22	79	2.77	1.44
17	41	3.85	1.27	79	2.77	1.41
18	41	3.85	1.30	79	2.81	1.43

and 41 people have accepted to attend the psycho-education group voluntarily. The program starting on 1 March 2014 was carried out for 90 min at 13.30 – 15.00 every Tuesday at the Hall of Psychological Counselling with Group, the Department of Psychological Counselling and Guidance, Faculty of Education, Erzincan University and the application was continued for 12 weeks until 31 July 2014 (The demands of Bairam Holiday and Some Intersessions were met). The program carried out by the researcher was also applied in the experimental and control groups of the scale in August 2014. The scale was applied to 41 people attending will training in experimental group and for 79 people in control group.

Analyzing and commenting on the data

In the scale prepared with 5 point likert approach, the alternative “Totally Agree” was given 5 points, “Agree Sometimes” 4 points, “Agree” 3 points, “Disagree” 2 points and “Totally Disagree” 1 point. In the assessment, The score interval of “5” has been accepted to be 4.20-5.00, the score interval of “4” to be 3.40-4.19, the score interval of “3” to be 2.60-3.39, the score interval of “2” to be 1.80-2.59 and the score interval of “1” to be 1.00-1.79. Arithmetic mean and standard deviation value have been used for the analysis of descriptive data, and one-way ANOVA analysis was used for comparing family education scores of experimental and control groups. In order to comment on the findings, level of significance was accepted as .05.

Findings and comments

Firstly descriptive and then statistical analysis were used by starting from the first factor of the scale while commenting on the findings.

The perceptions of the socioeconomic qualities of a family and the functions of school

During the research, the perceptions related with the first factor of experimental and control groups were commented on at first and standard deviation data were used in order to determine the qualities of score range of the items. The variation percentage of standard deviation according to mean was determined through variance coefficient ($V=S/X \cdot 100$) (Akdeniz, 1998). The variance coefficient of experimental group’s parents is $V=1.15/3.88 \times 100$ 29.64%. As is seen in Table 2, in this factor the perceptions of experimental group concentrate at the alternative “Agree sometimes” which is a general average ($X=3.88$) and spread to the alternatives “Agree” and “Totally Agree”, so they range in different alternatives approximately at the rate of 1/3. The variance coefficient of the individuals’ will perceptions in the control group is 46.16% and it has been determined that the range shows quite a spread quality. In control group, it has been understood that individuals can generally comprehend the functions of using will with their own personal psychosocial qualities as a systematical and functional will training supported by the experts has not been given

Table 3. The mean and standard deviation values of individuals' scores related with psychosocial, academic and personal development opportunities according to their will perceptions and ANOVA results.

Group	N	X	S	sd	F	p
Experimental Group	41	3.47	1.33			
Training Score				118	18.590	.001*
Control Group	79	2.42	1.28			
Training Score						

*P < .05.

in control group. On the other hand, it has shown that the will training supported by the psychoeducation experts about the will perceptions of experimental group has been effective about "understanding and using will".

Findings show that the ultimate targets can be reached as a result of will training program if an individual knows himself/herself and family qualities. According to control group, the lowest realization rates include the subjects 'the solution of the problems an individual can have (Item 5)' and 'the usage of will in case of failure (Item 16)'. According to this, for the individuals to use their will power and perceptions are seen to be quite inadequate. Individuals' Will Perceptions Related with Psychosocial, Academic and Personal Development Opportunities have been compared in Table 3.

It has been concluded that there were significant differences among the will perceptions of individuals in the experimental and control group according to the result of the scale [F (118)=18.590, p<.05]. As is seen from Table 3, in this factor where the data related with 'Psychosocial, Academic and Personal Development Opportunities' have been taken into account, the alternative of "Agree" appears in experimental group, the alternative of "Totally Disagree" appears in control group. According to these findings, it has been shown that will training contributes to 'Psychosocial, Academic and Personal Development' significantly by means of educational facilities offered to individuals and the will perceptions of individuals who do not attend to Will Training remain at a low level. The findings show that individuals need to know themselves and have the knowledge about their will perceptions and call attention to the requirement of vocational training.

DISCUSSION AND CONCLUSION

When the scale of internal coefficient ($\alpha=.918$) being also another structural validity (Anastasi and Urban, 1997) is taken into account, it can be concluded that Will Scale has shared 45% variance with both factor structure and Locus of Control Scale measuring in similar field; and Will Scale is the scale measuring will perception based on correlations with some related variations and thus it is valid in published literature. This tool is seen to be used

reliably when it is considered with its high coefficient of reliability.

It has been determined that its content is more comprehensive, its answering format is less limiting and its dimension is simpler than other control scales. It has been thought that developing a suitable Will Perception Scale for the young and adult and practising it in a psychoeducation program are significant contributions to the field. Within this scope, it can be said that the researcher has reached his initial aim.

Due to the fact that will is a cognitive characteristic, the arrangement of the training programs in a way it brings students rich experiences to be able to use will can make their perceptions of the skills of using will high. For this, a program can be prepared and carried out for the development of the skill of using will collaboratively (Paliç, 2011).

The studies in literature support the idea that using will power is a skill and it can be developed with training. This skill can be applicable to different people, time, event and surroundings. The adoption and internalization of this skill and its adaptation to cognitive, affective and behavioral areas in different ways must be included in the long-term targets. In addition to the information in literature, through this research, we aimed to achieve a program to help the young and adult cope with their problems.

The research is limited to university students. It is necessary to test the effectivity of the program in different types of school and adult employees as it has been done with only university students. In the direction of findings obtained, it has been suggested that will perception skill training should be among main subjects in guidance activities with the thought of its capability of contributing to university students' both academic and emotional-social development in the educational, vocational and personal guidance studies. Due to group dynamic's contribution to social skill training, it must be thought as another suggestion that group guidance activities should be preferred by school counsellors working at schools.

In short, the success in using will depends on the true identification of the problem at first. In addition to the identification of the problem truly, enough knowledge must be obtained about the problematic situation and various behaviour types thought to eliminate this problem must be formulated and it must be started from the

alternative to lead to the best solution. If the available alternatives are applied and they are successful after the evaluation of them, it is continued in that way; otherwise, another alternative is put into practice.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

The analysis of psychological counselors' work satisfaction in terms of some variables

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In this research, it is investigated whether there are job satisfaction differences among school counselors working at private elementary schools, state elementary schools, and guidance and research centers in İzmir (Turkey). Additionally, the differences among the levels of job satisfaction are examined according to some demographic variables. The sample of the research consists of 258 school counselors in İzmir. The data were collected by using Minnesota Job Satisfaction Scale and personal information sheet. One-Way Anova, Scheffe and t-test methods were performed on the data as statistical procedures. According to the findings of the research it was indicated that the job satisfaction of the teachers working at private elementary schools is higher than that of those working at the state elementary schools and guidance and research centers. As far as the graduation variable is concerned, the job satisfaction levels of the teachers who graduated from the Guidance and Counseling Centres were higher than that of those who graduated from the psychology department. The other result of the research was that there were no mean differences among the teachers in terms of gender, educational level, and the carrier variables.

Key words: Counselors, psychologists, job satisfaction.

INTRODUCTION

Work is regarded as the most important activity which helps a person to reach the necessary tools to continue his/her existence, gain a respectable place in society and have a better life. Also, work makes people to feel satisfied with a sense of achievement by utilising their talents. In this sense, what people think of, what they do and what/how they feel are directly linked to their social environment.

The early systematic information about work satisfaction dates back to 1930s (Agho et al., 1993:1009). As in classical and neo-classical approach, many studies refer to Maslow's "hierarchy of needs approach" and

Herzberg's "two-factor theory" while explaining work satisfaction theoretically (Burnard et al., 1999:12). Work satisfaction is multidimensional, which leads to different definitions. Some of these definitions are below.

Work satisfaction, in the simplest term, is to define how happy an employee is at work (Mrayyan, 2005:46). Work satisfaction is defined as employees' emotional reactions towards their work (Weiss, 2002:183). Work satisfaction includes the positive or negative feelings of an employee in relation to inner, external and general point of view towards his/her job (Odom et al., 1990:164). Work satisfaction is a name given for the emotional reaction an

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employee shows as a result of comparing what (s)he wants from his/her job with what (s)he gets (Samad, 2006:115).

Work satisfaction helps an employee become attached to his/her job and work efficiently; with it, the ratio of faulty and defective products decreases and labor turnover rate shrinks in addition to increasing the workers' happiness (Querstein et al., 1992:864). In case of work dissatisfaction, low performance and high employee turnover rate are seen, absenteeism and the intention of leaving the job increase and work commitment decreases and nonproductiveness increases due to alienation, stress, destruction of machines and facilities, mental and physical disorders (Dole and Schroeder, 2001:242; Noe et al., 1997:184). Work dissatisfaction can stem from role ambiguity, role conflict, role stress, work overload, professional development and advance in the career (Tull, 2006:478).

Work satisfaction is the total of the attitudes held towards the various sides of the work done. Each person who wants to take part in work life creates an expectation for physical conditions of the environment where (s)he will work in accordance with her/his education and habits, and wants the work (s)he had to meet these expectations. There is a success level which is expected from an employee and s(he) is expected to succeed it in accordance with her/his habits and traits. Work satisfaction is considerably an emotional bond created with the elements such as the fact that the relationships in an institution are warm, employees can use their skills totally, they feel respected, the work they have done is awarded and the necessary tools are provided in order to do well. (Özen, 2013:60).

Employees' attitudes towards their jobs occur in accordance with their expectation and needs. For this reason, employees are demoralized and lose productivity if an organization does not meet their needs and expectations even if it has structural, physical and economical conditions in order to be effective (Agho et al., 1993:1008). From emphasizing the psychological aspects of work environment indicates that two factors affecting people's happiness are "to produce" and "to love- to be loved". A person's increasing work satisfaction makes his/her labor productivity higher. A person whose success and productivity needs are fulfilled also will have met loving and beloved needs with more positive behaviours by establishing healthier relationships with his/her surroundings.

While a person feels satisfied with some conditions of the job or work environment, he or she may feel unsatisfied with some conditions. The more satisfaction, the higher work commitment and content will be. Employees must obey the rules at work. Exaggerating these obligations can disincite employees. Also, when people do the job which can require initiative, they want to maintain control and responsibility on their own.

Even if there is a feeling that prestigious jobs in society

bring more work satisfaction, jobs with low prestige create satisfaction among many employees. Work satisfaction can be used as an indicator of work quality. However, the relationship between work quality and work satisfaction is not that simple. Work satisfaction is affected by expectations. Accordingly, if the expectations of two different people doing the same job with the same qualities are different, their work satisfaction can be totally different (Llorente and Macias, 2005:664). Locke (1976:1311) defines work satisfaction as a satisfying or positive situation as a result of evaluating his/her job or work life. According to expectancy theory, work satisfaction is determined by the difference between what people need to get or what people think about the fact that they deserve and all the things they get (Porter, 1962:382; Vroom, 1964:80; Lawler, 1994:75). In other words, if employees cannot get what they believe they deserve, they feel dissatisfied (Lawler, 1994:76). As understood from these definitions, work satisfaction occurs as a result of individuals' various attitudes.

Many elements can be effective to achieve work satisfaction. These elements can be categorized into three groups such as environmental (job itself and work environment including social interaction at work) psychological (personality, behaviour, attitude) and demographical (age, gender) elements (Crossman and Haris, 2006:35). The work satisfaction of a teacher means emotional relationship related with teaching role. This relationship is a function of the relationship between what a teacher wants from teaching and what (s)he comprehends (Zembylas and Papanastasiou, 2005:443). The main factor which contributes to the work satisfaction of teachers is that they work with children. Teachers improve warm, candid and personal relationship with children, teaching is intellectual and hard work and the job of teaching provides autonomy and independence, which contribute to work satisfaction (Shann, 1998:69). However, a series of factors such as the monotony of daily routines, the lack of motive and discipline in some of students, the lack of support and appreciation of colleagues and directors might harm teachers' work satisfaction feelings and cause them to feel disappointed and to perceive their self-respect negatively (Nias, 1996:298).

Employees' work satisfaction is not apparent most of the time. The first indicators of their dissatisfaction could be coming to work late, the difficulty in adapting to work, being unable to perform the task completely. In human's nature, there are searching and renewing desires, which means that an employee will be able to change his/her job despite the fact that (s)he is pleased with it. People want to be successful in the organizations they work for and get promoted. Promotion increases a person's social status and change his/her place in society positively as it increases income from a job. People with the desire of promotion get high satisfaction from the work as they find the chance of advancing in their career.

In the research conducted in many developed countries, the factors such as the lack of professional autonomy, diminishing sources, low salaries, changes imposed insensibly and continuous criticism in the media are found to bound to the low level of teachers' work satisfaction (Scott and Dinham, 2003:83; Van den Berg, 2002:623; Zembylas and Papanastasiou, 2005:457). The reasons such as teachers' work load and expectations, students' performance, behaviours and discipline problems, the relationships with their friends, administrative staff and supervisors, administrative routines and various paper works, low salary, lack of development opportunities, decreased respect towards the job are ranked as the sources of teachers' work dissatisfaction (Thompson et al., 1997:34). Also, research findings show that many personal qualities such as sex, age, marriage, parental situation, work experience affect work satisfaction in different ways (Koustelios, 2001:356). The satisfaction of social and psychological needs as well as physical ones by earning money in the scope of getting job is the point in question (Michaelowa, 2002:75).

Work satisfaction is related to the level of meeting these needs in a way. In this respect work satisfaction directly affects satisfaction getting from life and the physical and psychological health of individuals. Due to this reason, it has become an important subject in health and psychological counseling fields. Because, the work satisfaction of the ones giving this service in counseling jobs aimed at protecting and maintaining people's physical and psychological health has a critical importance in terms of the quality and effect of service they give as well as their own health (Van der Berg, 2002:628). Teaching profession is different from other jobs in various aspects. Teachers spend most of their time with students or working alone (Barnabé ve Burns, 1994:182). Teachers' work satisfaction can function as a tool for improving the quality of education and providing good education. Teachers' work satisfaction can increase with the long-term and reliable job opportunity with a high salary in a well-equipped school. Besides, teachers' work satisfaction is positively affected from good relationships with colleagues, directors and parents, while negatively affected from oppressive management (Michaelowa, 2002:418).

As is known, if work conditions are not perceived well or suitably, it decreases work satisfaction. Employees' feelings and thoughts about the work also present important data about work environment. The necessary regulations can be done in work conditions in the event that work satisfaction is evaluated periodically. Considering that teachers' work satisfaction or dissatisfaction affects the structure and operation of the school they work in (Sargent and Hannum, 2005), the regulations at school can contribute to improving the quality of education as well as teachers' work satisfaction. Due to work satisfaction's relationship with an employee's physical and mental wellness – in other words his/her health- (Oshagbemi, 2000), determining the levels of

teachers' work satisfaction and attracting attention to the areas they are dissatisfied with are of vital importance. In literature, there are a great number of studies in which work satisfaction is analyzed in terms of teachers' working conditions, personal qualities and various variables (Avşaroğlu et al., 2005; Bishay, 1996; Crossman and Haris, 2006; Dinham and Scott, 1996; Hulpia et al., 2009; Ma and MacMillan, 1999; Menon and Reppa, 2011; Perie and Baker, 1997; Sargent and Hannum, 2005; Zembylas and Papanastasiou, 2005).

In this study, the aim is to make a new contribution to the literature on the subject. Some studies have been done in order to determine psychological counselors' work satisfaction. However, such a study is thought to be necessary as any study comparing psychological counselors at state and private primary and secondary schools with Counseling and Research Centers is unavailable.

METHOD

In this part, data related with research model, research group (population and sample), data collection tools, statistical methods used in collecting data and analyzing data are included.

Research model

In this study, with a descriptive survey the work satisfaction levels of psychological counselors working for the state and private primary and secondary schools and in the Counseling and Research Centers in Izmir city centre have been analyzed in terms of variables such as gender, professional seniority, the last graduation field (major), degree of learning and the institution they work in.

Research group

The research group includes 258 psychological counsellors (191 females and 67 males in total), with 6 years or more experience, working for the state and private primary and secondary schools and the Counseling and Research Centers in central districts of Izmir (Turkey) during 2011–2012 school year.

Collecting the data

The data about the work satisfaction levels of psychological counselors working for the state and private primary and secondary schools and the Counseling and Research Centers have been obtained through Minnesota Satisfaction Questionnaire (short form) developed by Weiss et al. (1967). The demographic attributes of psychological counselors have been determined via "Personal Information Form".

The translation of Minnesota Satisfaction Questionnaire into Turkish was done by Deniz and Gökçora (1985) and its validity and reliability were tested by Gillet and Schwab (1975, as cited in Özdayı, 1990). The scale is a likert scale assessing the factors about the work. The answers are organized according to 5- point rating. The short form of the scale was used by Özdayı (1990). Özdayı (1990) found out that the reliability co-efficient is 0.86 in his study. "Personal Information Form" was developed by the researcher.

Table 1. The distribution of psychological counselors' work satisfaction scores in terms of their gender and T-test results.

	Gender	N	\bar{X}	S	T	sd	p
Internal	Female	191	48.83	6.015			
	Male	67	48.89	7.679	.064	256	.950
External	Female	191	19.45	4.81			
	Male	67	20.08	4.63	.924	256	.365
General	Female	191	73.08	10.88			
	Male	67	74.00	12.68	.568	256	.579

Table 2. The distribution of psychological counselors' work satisfaction scores in terms of their degree of learning and T-test results.

	Degree of learning	N	\bar{X}	S	T	sd	p
Internal	Undergrad.	206	48.83	6.46			
	Postgrad.	52	48.89	6.50	.245	256	.814
External	Undergrad.	206	19.45	4.77			
	Postgrad.	52	20.08	4.77	.824	256	.424
General	Undergrad.	206	73.08	11.40			
	Postgrad.	52	74.00	11.14	.476	256	.652

Data analysis

One way analysis of variance has been used in comparing the work satisfaction levels in terms of various identity attributes depending on the institution they work in and being more than two groups when analysing the data; and in finding out that F value is meaningful, Scheffe test (post- hoc test) was used. T- Test technique was used in pair groups. The analysis was done by means of SPSS packaged software and the level of significance was accepted as 0.05.

FINDINGS

The work satisfaction levels of psychological counselors were analyzed in terms of some independent variables. According to six variables taken into account respectively below, the findings about the work satisfaction points of psychological counselors working for the state and private primary and secondary schools and the Counseling and Research Centers are presented.

The work satisfaction levels of psychological counselors working for the state and private primary and secondary schools and the counseling and research centers in terms of their gender

The scores of female and male psychological counsellors in terms of internal and external satisfaction points and total satisfaction point are given in Table 1.

As a result of t-test for whether the scores taken from Work Satisfaction Scale are different or not in terms of their gender, it is determined that there is no significant difference among groups [t (256) = 0.568, p>05]. The same result is valid for internal satisfaction [t(256) = 0.064, p>05] and external satisfaction [t (256)= 0.924, p>05] subscales of the scale. In other words, gender variable does not cause difference in both two sub-dimensions and total score.

The work satisfaction levels of psychological counselors working for the state and private primary and secondary schools and the counseling and research centers in terms of their degree of learning

The scores of the subscribers who have undergraduate and postgraduate education in terms of internal and external satisfaction scores and total score are given in Table 2.

As a result of t-test for whether the scores taken from Work Satisfaction Scale are different or not in terms of their degree of learning, it is determined that there is no significant difference among groups [t (256) = 0.476, p>05]. The same result is valid for internal satisfaction [t(256) = 0.245, p>05] and external satisfaction [t (256)= 0.824, p>05] subscales of the scale. In other words, degree of learning variable does not cause difference in both two sub-dimensions and total score.

Table 3. The mean of psychological counselors' work satisfaction scores in terms of the institution they work in and standard deviation.

	The Institution they work in	N	Average	Standard Deviation
Internal	State	165	46.36	6.29
	Private	47	50.14	5.60
	CRC	46	45.50	6.88
	Total	258	46.84	6.45
External	State	165	16.48	4.45
	Private	47	21.50	3.48
	CRC	46	17.98	4.99
	Total	258	17.60	4.77
General	State	165	69.46	10.70
	Private	47	79.31	9.038
	CRC	46	70.43	12.39
	Total	258	71.31	11.33

Table 4. The ANOVA results of psychological counselors' work satisfaction scores in terms of the institution they work in.

	Source of variance	Sum of squares	sd	Mean of squares	F	p	Significant difference
Internal	Intergroup	588.35	2	288.63	8.342	.001	2-1, 2-3
	In-groups	9824.74	255	41.74			
	Total	10413.09	257				
External	Intergroup	856.88	2	423.95	24.618	.000	2-1, 2-3
	In-groups	4544.48	255	19.43			
	Total	5401.36	257				
General	Intergroup	3272.74	2	1636.37	15.194	.000	2-1, 2-3
	In-groups	28461.97	255	116.17			
	Total	31734.71	277				

The work satisfaction levels of psychological counselors working for the state and private primary and secondary schools and the counseling and research centers in terms of the institution they work in

The relevant scores of psychological counselors' work satisfaction in terms of the institution they work in are given in Table 3.

In order to determine whether the difference among means is statistically significant or not, one-way analysis of variance has been done to the scores taken from each sub-scales (internal –external) and total scale. The analysis results are given in Table 4.

As it is seen on Table 4, it is understood that the difference in terms of the institution they work in is [$F(2-255) = 14.086, P < .01$] in general satisfaction, [$F(2-255) = 7.281, P < .01$] in internal satisfaction, [$F(2-255)$

$=21.815, P < .01$] in external satisfaction in each sub-dimension and total work satisfaction. As a result of post-hoc t-test (Schfee) to determine which groups the difference stems from, it is determined that there is a statistical significant difference between private schools and state schools and again between private schools and Counseling and Research Centers in support of private schools when each sub-dimension and total scores are taken into account.

The work satisfaction levels of psychological counselors working for the state and private primary and secondary schools and the counseling and research centers in terms of their seniority

The relevant scores of psychological counselors' work satisfaction levels in terms of their seniority are given in

Table 5. The mean of psychological counselors' work satisfaction scores in terms of their seniority and Standard Deviation.

	Seniority	N	Mean	Standard Deviation
Internal	1–5 years	90	47.64	6.07
	6–10 years	98	46.12	6.78
	11 years and more	70	46.89	6.40
	Total	258	46.84	6.45
External	1–5 years	90	17.95	4.64
	6–10 years	98	17.14	4.73
	11 years and more	70	17.85	5.00
	Total	258	17.60	4.77
General	1–5 years	90	72.51	10.36
	6–10 years	98	70.06	11.77
	11 years and more	70	71.62	11.86
	Total	258	71.31	11.33

Table 6. The ANOVA results of psychological counselors' work satisfaction scores in terms of seniority.

		Sum of Squares	sd	Mean of Squares	F	p
Internal	Inter groups	114.396	2	52.20	1.26	.287
	In-groups	10194.47	255	41.57		
	Total	10388.87	257			
External	Inter groups	37.001	2	17.50	.77	.465
	In-groups	5594.27	255	22.75		
	Total	5649.27	257			
General	Inter groups	290.45	2	140.22	1.09	.337
	In-groups	31554.26	255	128.39		
	Total	31844.71	257			

Table 5.

To determine whether the difference among means in Table 5 is statistically significant or not, one-way analysis of variance has been done to the scores taken from each sub-scales (internal –external) and total scale. The analysis results are given in Table 6.

As it is understood from Table 6, seniority does not cause any difference in satisfaction scores when both sub-scales and total satisfaction scores are taken into account; General satisfaction [$F(2-255) = 1.09, P > .05$], Internal satisfaction [$F(2-255) = 1.26, P > .05$], External satisfaction [$F(2-255) = 0.77, P > .05$].

The work satisfaction levels of psychological counselors working for the state and private primary and secondary schools and the counseling and research centers in terms of their major

The relevant scores of psychological counselors' work

satisfaction levels in terms of their major are given in Table 7.

To determine whether the difference among means in Table 7 is statistically significant or not, one-way analysis of variance has been done to the scores taken from each sub-scales (internal –external) and total scale. The analysis results are given in Table 8.

As it is seen from Table 8, it is found that groups differ in terms of internal [$F(2-255) = 3.54 P < .05$] and general [$F(2-255) = 3.05 P < .05$] satisfaction scores; however, there is no significant difference among groups in terms of external satisfaction [$F(2-245) = 2.20 P > .05$] As a result of post-hoc t-test analysis to determine which groups mean differences in relevant dimensions stem from, it is determined that there is a significant difference between the graduates of Psychological Counseling and Guidance department and the graduates of other departments of Faculty of Education in support of the graduates of PCG in both two groups (internal and general). It is found that there is no significant difference

Table 7. The mean of psychological counselors' work satisfaction scores in terms of their major and standard deviation.

	Major	N	Mean	Standard Deviation
Internal	PCG	146	47,73	5,75
	Psychology	102	46,06	7,74
	Total	258	46,84	6,45
External	PCG	146	18,09	4,61
	Psychology	102	16,35	5,55
	Total	258	17,61	4,77
General	PCG	146	72,78	10,24
	Psychology	102	69,18	13,37
	Total	248	71,31	11,34

Table 8. The ANOVA results of psychological counselors' work satisfaction scores in terms of their major.

		Sum of Squares	sd	Mean of Squares	F	P	Significant Difference
Internal	Inter groups	288,723	2	144,36	3,54	,03	1-3
	In-groups	10000,14	245	40,82			
	Total	10288,87	247				
External	Inter groups	99,152	2	49,58	2,20	,11	
	In-groups	5510,12	245	22,49			
	Total	5609,27	247				
General	Inter groups	771,665	2	385,83	3,05	,05	1-3
	In-groups	30963,05	245	126,38			
	Total	31734,71	247				

between the graduates of PCG department and the graduates of Psychology department and between the graduates of other departments of Faculty of Education and the graduates of Psychology department.

RESULT AND RECOMMENDATIONS

The work satisfaction levels of psychological counselors working for the state and private primary and secondary schools and in the Counseling and Research Centers have been analyzed in terms of six variables. These variables are gender, degree of learning, the institution they work in, seniority, major and income.

In this part, the findings about the relationship between independent variables and work satisfaction levels analyzed in the research are discussed and commented on respectively.

The discussion and comment of the findings about psychological counselors' work satisfaction levels in terms of gender

In the research, in terms of gender variable it is found out

that there is no significant difference among psychological counselors' work satisfaction levels (internal, external and general work satisfaction). This result shows consistency with the results of some research results in body of literature (Wiggins, 1984). However, gender is seen to be a deterministic factor of work satisfaction in some of the research over other occupational groups and Psychological Counselors. Crossman and Haris (2006) found out that gender is an important predictor of work satisfaction in the research they did. Abd-El- Fattah (2010) determined that the work satisfaction levels of female teachers working in primary and secondary schools are higher than that of male teachers. Bishay (1996), Mwamwenda (1997), Menon and Reppa (2011) found that the work satisfaction levels of females are higher than that of males in the research. Despite this, it is confirmed that the work satisfaction levels of males are higher than those of females in some research (Abd-El- Fattah, 2010; Spear et al., 2000; Oshagbemi, 2000; Akiri and Ugborugbo, 2009; Klecker and Loadman, 1999; Ma and MacMillan, 1999). According to the research by Witt and Nye (2000), the work satisfaction levels of male psychological counselors working in state and private schools

are higher than that of female psychological counselors. In some studies, it is found that there is no relationship or difference between psychological counselors' work satisfaction and gender. In these studies, it is determined that female and male teachers have similar work satisfaction levels (Avşaroğlu et al., 2005; Sargent and Hannum, 2005; Clark, Oswald and Warr, 1996).

According to this, it seems difficult to say a certain thing about the relationship between work satisfaction and gender. When gender variable is together with other variables, it can be effective over work satisfaction.

Therefore, it can be said that more systematical research about this subject is necessary.

The discussion and comment of the findings about psychological counselors' work satisfaction levels in terms of degree of learning

In the research, in terms of degree of learning variable it is found out that there is no significant difference among psychological counselors' work satisfaction levels (internal, external and general work satisfaction). According to this, the work satisfaction levels of psychological counselors who have undergraduate and postgraduate degree are similar. This result shows consistency with the research of De Mato (2001), Brice (2001), Rode (2004) and Rose (2005). However, Witt and Nye (2000) found a significant relationship between external work satisfaction and degree of learning in the research they did with psychological counselors.

When employees from other occupational groups are taken into account, it is seen that there are different results between degree of learning and work satisfaction. While it is seen that there is no difference in some of the studies (Rain et al., 1991; Nguyen et al., 2003; Bowling, 2007), they found that there is a positive relationship between work satisfaction and degree of learning in some other studies (Kleckler and Loadman, 1999; Michaelowa, 2002).

As a result, it is seen that there is no consistent relationship between degree of learning and work satisfaction. Taking it into account with the common effects of other variables can help us arrive at a more certain conclusion.

The discussion and comment of the findings about psychological counselors' work satisfaction levels in terms of the institution they work in

In the research, it is concluded that there is a significant difference between private and state schools and between private schools and CRC in support of private schools among psychological counselors' work satisfaction levels (internal, external and general work satisfaction) in terms of the institution they work in. This result shows consistency with the results of the research

by Shann (1998).

The work satisfaction levels of psychological counselors working in private schools are high, bringing to mind that protective factors – external factors (salary, work conditions, supervision, organization facilities, etc.) which are the most deterministic qualities of work satisfaction play a vital role according to Herzberg's two factor theory because internal factors- incentives (the core of the work, the suitability of activities for interests and abilities, possibility of creativity, development, etc.) are mainly related to the term job. External factors are mainly related to the term work. While external factors may vary according to the conditions for workplace, internal factors does not vary very much. Therefore it is possible to transfer the protective factors contributing to work satisfaction of psychological counselors in private schools into state schools to increase the work satisfaction level of psychological counselors working in state schools and work efficiency.

The discussion and comment of the findings about psychological counselors' work satisfaction levels in terms of seniority

In the research, in terms of seniority variable it is found out that there is no significant difference among psychological counselors' work satisfaction levels (internal, external and general work satisfaction). This result shows consistency with the studies of Ashforth and Humphrey (1993).

The similar results can be seen in the work satisfaction studies done with other occupational groups. In spite of this, there are research done by people such as Thompson et al. (1997), Crossman and Haris (2006), De Mato (2001) showing that the higher the seniority level becomes, the more work satisfaction is seen. Although it is highlighted that work satisfaction increases with age in the psychology of industry and organization (Halloran and Benton, 1987), such a result may stem from no change and expectation especially in teaching. Magunson et al. (2004) analyzed the levels of work satisfaction, commitment and stress learning consultants had after the first two years in the study they did. According to the findings, it is seen that consultants have less work satisfaction level after the second year than the first year.

This result is not seen to be a generalizable result for different research groups despite the theoretical information about the fact that work satisfaction is high in the first years when people start to work and later it becomes lower and in the last years it increases again.

The discussion and comment of the findings about psychological counselors' work satisfaction levels in terms of major

It is concluded that there is a significant difference

between the work satisfaction level of the graduates of Psychological Counseling department and the work satisfaction level of the graduates of Psychology department (internal and general work satisfaction) but there is no significant difference in terms of external satisfaction in the research in terms of major. This result shows consistency with the studies of Bowling (2007). Despite this, it is found that the graduates of Psychology department vary in some sub-dimensions of work satisfaction and the graduates of Psychology Counseling department vary in some other sub-dimensions in the study by Koustelios (2001), Akiri and Ugborugbo (2009). The graduates of Psychological Counseling department have more work satisfaction than the graduates of Psychology department. In addition to this, a significant difference cannot be found between major of psychological counsellors working in private schools and their work satisfaction. Besides, a significant difference cannot be found between work satisfaction and major in the studies by Abd-El-Fattah (2010), Sargent and Hannum (2003)

According to this, it is possible to say that having a job related with a person's major affects work satisfaction positively. Because a person will find a chance to transfer the knowledge and skill (s)he has in the relevant department into real life so (s)he will be able to adapt to work more easily and get more efficiency from his/her job and so (s)he will have more work satisfaction. The research findings support these views.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Knowledge inertia and organizational learning as the explanation of organizational performance

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Knowledge is an important concept for individuals and organizations both as a power and source. Thus, knowledge management has become important subject for researchers. However, when people encounter problems, they usually try to produce solutions by utilizing their previous knowledge and experience. Such problem solving strategies are called "Knowledge Inertia". Purpose of this study is to test the level of relationship interaction between knowledge inertia, organizational learning and organizational performance. In line with this purpose, six hypotheses were developed. Sample of the research consists of 405 teachers who work in Diyarbakır City Central Districts (Baglar, Kayapinar, Sur and Yenisehir). In this research, relational survey model was utilized. Also Knowledge Inertia Scale, Organizational Learning Scale and Organizational Performance Scale were utilized. For confirmatory factor analyses and structural equality model, SPSS and AMOS packaged software were utilized. Goodness of fit indexes of the developed model are RMSEA=.060; SRMR=.069; CMIN\DF=2,475; GFI=.922; CFI=.964; AGFI=.911; NFI=.905; Chi squared=2395,329; df=968 and p=.000. This result shows that the fit values of the model are acceptable and at desired level. First of the most important findings of the study is that knowledge inertia and organizational learning are significant predictors of organizational performance. Second is that organizational learning has a function of mediator between knowledge inertia and organizational performance.

Key words: Organizational inertia, organizational learning, organizational performance, structural equation modeling.

INTRODUCTION

Knowledge is seen as a precious and efficient source for organizations and individuals. Besides, it is seen as a tool of survival in dynamic and competitive environments increasingly. This situation shows the necessity of gaining and using knowledge for organizational activities. (Shalika et al., 2011; Sharifirad, 2010).

Knowledge management and organizational learning

are definitely not seen as new subjects; their original concepts root back to twenty years ago. Since the 1990s, the concern for researching knowledge management has gradually increased and theories were developed about knowledge management. Organizational learning applications are even older than this date (Liao et al., 2008; Senge, 1990; Wiig, 1994).

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Knowledge management and organizational learning applications show organizational performance improvement level (Caveleri et al., 2005; Davenport and Prusak, 1998).

However, there are a lot of obstacles for efficient and fruitful knowledge management and organizational learning. Liao (2002) states that knowledge management may inhibit an organization's skills for learning and problem solving. Generally routine problem solving applications are accepted as time and endeavor saving, even as omitting risks (Liao et al., 2008). Static knowledge sources and old previous experiences cause stereotyped ways and approaches in dealing with problems to the root. From the aspect of behavior management, such foresights can cause the organization to take higher risks in a highly risky competition environment. Knowledge inertia does not only have a negative impact in achieving a knowledge, but also can reveal the secret knowledge of the organization (Liao, 2002).

Knowledge inertia theory was suggested first by Liao in 2002 but was not tested experimentally. However, it is seen that knowledge inertia was tested in the studies of Liao et al. in 2008. From these studies, relation between knowledge inertia, organizational learning and organizational performance is studied by means of structural equation model approach.

THEORETICAL FRAMEWORK

Knowledge inertia

Physics explains principles of inertia as the fact that stable or monotonic action of an object continues, unless it is moved clearly by a force. In the event of encountering any obstacles, there are physical restraints in the movement of the objects and they will move in the expected orbits (Liao et al., 2008). People can follow the moving objects and reach them by estimating the direction they are going. This fact shows that there is static mode in human mind and perception that is called laziness or knowledge inertia (Shalika and Nikou, 2011; Sharifirad, 2010). As we consider the fact that human life is mostly spent in organizations, it is inevitable that a life with inertia will affect the performance of organizations negatively and cause conflicts between individual and organization (Schein, 1990).

Inertia is related to problems that are experienced in knowledge and skill transfers and communication. If habits can be changed and skills transferred, then organizations can improve and learn (Collinson and Wilson, 2006). On the other hand, individuals and organizations can solve high level problems with their previous knowledge and experience and can generalize them into new conditions. However, utilizing previous experiences for solving new problems reveals the fact that similar

phenomena leave these static positions until a new force changes them. Because inertia in knowledge is rooted from using routine or casual methods in solving problems, following old knowledge and experiences may strengthen or weaken the problem solving skills of the organization (Shalika et al., 2011).

When the term inertia is used for human behaviors, individuals use their knowledge and experience from the past. This is called knowledge inertia (Liao et al., 2008). Everything is caused by non-revised and non-updated previous experiences and knowledge. This situation is referred to predictable behavior and problem solving strategy of an organization. Knowledge inertia is caused by lack of innovative thinking and behavior; it affects fruitful learning and knowledge achievement negatively (Fang et al., 2010). According to Liao et al. (2008), knowledge inertia provides the empirical evidence to support, that is it comprises two dimensions: experience and learning inertia. Experience inertia is defined as individuals solving problems with previous experience and knowledge. Learning inertia is when individuals learn knowledge from the same source.

Organizational learning

In the course of knowledge society, importance of learning has been newly understood. In our day, knowledge does not bear a meaning by itself. What is important is learning. Because knowledge emerges as a result of learning and only by means of learning can the knowledge be achieved and become useable, in that case, learning can be described as progress of achieving knowledge (Lingam and Lingam, 2013; Marquardt, 1996). In this progress both individuals and organizations strive to achieve the required knowledge. As the world changes quickly, level of uncertainty will increase evenly. Thus, previous experiences may not be sufficiently reliable most of the time. Predicting changes, reacting to them and achieving performance constantly require learning (Davenport and Prusak, 2001).

Being an important element of organizational change capacity, the knowledge that is achieved as a result of learning (Getha-Taylor, 2008) is highly important and valuable source in terms of adaptation of organizations to the changes in environmental factors (Dodgson, 1993). In this context, organizational learning has an essential value for continuing organizational existence and achieving sustainable competition supremacy by dealing with changes (Klimecki and Lassleben, 1999).

The term organizational learning has become the focus of interest of the scientists, organizations, public institutes that work on the field of management and organizations. Thus, many studies have been made over organizational learning and every scientist has described organizational learning from different points of view. According to some

of these descriptions, organizational learning is “the progress where the organizations achieve timely and accurate knowledge and think better and thus, organizational behaviors change or existing behaviors improve (Garvin, 1993)”. “It is a progress of improving organizational performance and adopting this improvement, where organizations build, complete and organize knowledge and routines (Dodgson, 1993)”. “It represents a progress that starts at individual level and reaches team/group learning and from there to organizational learning as a whole (Probst and Büchel, 1997).

Organizations learn through learning individuals. Individuals are representatives of organization activities, thus, they are also representatives of organizational learning (Argyris, 1990; Shrivastava, 1983). Organizational learning happens through them (Crossan et al., 1999). However, the sum of learning of all individuals in an organization does not provide organizational learning or organizational knowledge (Cohen and Levinthal, 1990). In addition, organizational learning cannot happen without individual learning. From this point of view it can be said that organizational learning happens in three possibilities. In the first possibility, the individuals learn; in second possibility, individuals learn while the organization learns; in last possibility, a collective learning happens (Örtenblad, 2001).

However Adams et al. (1998) describe inertia as an element that prevents organization’s learning capacity towards achieving a new product. Besides, knowledge inertia may prevent individuals’ learning skills, and in return, this can affect organizational learning (cit. Liao et al., 2008).

Organizational performance

The term performance that takes place in the center of organizational and individual learning theory is the skill of achieving purposes by utilizing organization sources efficiently and productively (Boyne, 2003; Rainey, 1997). On the other hand, organizational performance is a quantitative and qualitative expression of “where has the organization reached or what has it achieved on the way to its purpose” (Şimşek and Nursoy, 2002).

Performance can be evaluated in individual or organizational basis and the main element building this term is measurement. Determining and measuring the criteria that are impressive in delivering a performance provides revealing individual and organizational performance (Turunç and Akkoç, 2014). However, measuring organizational performance is difficult since it has a complex and multidimensional structure and forming a systematic structure for every situation has not been possible so far (Dess and Robinson, 1984; Ford and Schellenberg, 1982). Thus, either objective scales obtained from organizational records or subjective scales

obtained from members or shareholders of the organization based on perception have been used in organization level performance researches (Seashore and Yuchtman, 1967; Campbell, 1977).

In addition, determining performance is possible by measuring and evaluating the relation between organization input and output. Organizations also evaluate their outputs or results in accordance with performance different dimensions (Benligiray, 1999). In education system, the first thing that comes to mind in terms of performance evaluation or measurement is evaluation and measurement of students and managers. However, except these, measuring physical and technical equipment and families’ performance holds an important place in the system. Developing a performance management system except these is quite difficult since this relies on school’s strategic and work plan (Ensari, 2005).

The core of any evaluation process is to identify, correct and improve weak and strong side of teaching activities and to lead improving organizational performance. Sufficient, accurate and acceptable measurement instruments must be developed to measure teaching performance. Measurement of efficiency can be performed by school principals. In addition, students’ success grades, colleague reviews, self-review of the teacher and systematic observations can be considered. Developing new strategies and purposes of lessons, utilizing new teaching methods require identifying basic values of the evaluation. An evaluation cannot be performed based only on one situation. An evaluation must be performed multidimensionally by considering a combination of various evaluation strategies (Nwagwu, 1998).

One of the most important factors that can impact these endeavors towards increasing or improving organizational performance is organization’s organizational strife in learning progress. Organizations that have adopted learning organization approach constantly try to perform improving and innovative approaches. Schools as learning organization can apply a new educational technology or teaching method. Schools performing organizational develop general strategies that contain new learning subjects and that are related to ways of teaching these subjects in their daylong applications (Çelik, 1997). Learning progress in fact starts with feedbacks or responses from organization employees and causes the organization and organizational performance to improve (Mausloff, 2004; Deng and Tsacle, 2006). As a generally accepted opinion in organizational literature, final output of the organizational learning must be improved in organizational performance (Holton and Kaiser, 2000).

According to Buckler (1998), who tried to explain the relation between organizational learning and performance within a frame of simple model, organizational learning will bring behavioral change in conjunction with

achievement of new knowledge, approach and skills and this can end in improvement in product and services and progresses. Final outcome of all these progresses is a step by step improvement in performance; which means a constant improvement where the assessments are done better in time or coming to a position where one can do better jobs. On the contrary, when the fact that an important part of human life is spent in organizations is considered, it is inevitable that a life with inertia may affect performance, learning level and productivity of individuals and organizations negatively and cause conflicts between individual and organization. Hannan and Freeman (1984) stated that inertia is common in organizations where teamwork is insufficient and a resistance against constant learning is dominant.

In line with literature, the following hypotheses have been developed related to knowledge inertia, organizational learning and organizational performance and the relation between these three parameter which are described above.

Hypotheses

- H1. Knowledge inertia affects learning negatively and significantly.
 H2. Knowledge inertia explains organizational learning significantly.
 H3. Knowledge inertia affects organizational performance negatively and significantly.
 H4. Organizational learning affects organizational performance positively and significantly.
 H5. Knowledge inertia and organizational learning explains organizational performance in a high grade and significantly.
 H6. Organizational learning has a partial mediator impact between knowledge inertia and organizational performance.

METHODS

Research model

This research was performed by means of relational screening model. This is a model that aims to determine the existence and grade between two or between more than two variables (Karasar, 2012). In terms of this, the study focuses on the interaction between teachers' knowledge inertia, organizational learning and organizational performance levels and their level of explanation of each other.

Sample

Sample of the research consists of 405 teachers who work in randomly selected primary schools in Diyarbakir city's central districts: Baglar, Kayapinar, Sur and Yenisehir. For structural equality model, data must meet the multiple normality assumption.

In order to meet this assumption, minimum sample size must be between 100 and 150 (Hair et al., 1998). Since contributor number of the research is 405, this number is suitable for the purpose and statistical analysis of the research. Demographical features of the attendees are as follows: 61.7% of the attendees are (f=250) "females"; 28.3%, (f=155) "males". 28,4% of the attendees (f=115) are in "30 and younger" age groups, 45.9% (f=186), "31-40" age groups and 25.7% (f=104), "41 and older" age groups. In terms of work duration, 45.7% (f=185) has "10 or less years"; 35.3% (f=143), "11-20 years"; 13.3% (f=54), "21-30 years and 5.7% (f=23), "31 or more years".

Analyzing of Data

Data obtained from research were first entered into SPSS (Statistical Package for the Social Sciences) package software and demographical features of sample group were analyzed by means of this software. For confirmatory factor analysis and designed model AMOS (Analysis of Moment Structures) was utilized. In estimating model parameters in confirmatory factor analysis RMSEA (The Root Mean Square Error of Approximation); SRMR (Standardized Root Mean Square), GFI(Goodness of Fit Index), CFI (Comparative Fit Index), AGFI (Adjusted Goodness of Fit Index), NFI (Normed Fit Index), $\chi^2/df = CMIN/DF$ (chi square/degree of freedom), and significance level (p) fit indexes were considered. RMSEA value was 0-0,08; SRMR value was 0-0.10; GFI value was .90-1.00; CFI value was .90-1.00; AGFI value was .85-1.00; NFI value was .90-1.00; χ^2/df (CMIN/DF) value was 0-3; p value was 0.01-0.05. These show good fit indexes (Bayram, 2010; Byrne, 2001; Joreskog and Sorbom, 1993; Kline, 2005; Schermelleh-Engel and Moosbrugger, 2003; Reisinger and Mavondo, 2006; Şimşek, 2007). In this research, lower limit for factor load of items in confirmative factor analysis is taken as .30. If there are less items in a scale that is prepared in social sciences field, factor load value lower limit can be decreased to .30 (Büyükoztürk, 2012). Additionally in assessment of normality for confirmative factor analysis and structural equality model, critical ration was grounded on fewer than 10. According to Kline (2005) critical ratio is in some sort the normalized estimation of multivariable kurtosis i.e. "z" value. Critical ratio being higher than 10 shows that there is a problem in kurtosis value of the distribution.

Data Collection tools and confirmatory factor analysis

Knowledge inertia scale

It was developed by Liao et al. (2008). The scale that was adapted by the researcher to Turkish language consists of 14 items which has the features of assessment of Learning Inertia (7 items) and Experience Inertia (7 items). Scale's Cronbach Alpha coefficient whose validity and reliability studies were performed was .755 in terms of Learning Inertia and .602 in terms of Experience Inertia. Knowledge Inertia Scale is a Likert type scale graded from 1 to 5; accordingly, I strongly disagree: 1 point; I disagree: 2 points; I am neutral: 3 points; I agree: 4 points; I strongly agree: 5 points.

As a result of the analysis performed on data obtained from this study, Cronbach Alpha coefficient in terms of learning inertia was found to be .82, while it was .73 in terms of experience inertia (Table 1). Additionally confirmative factor analysis diagram of the scale is shown in Figure 1.

As a result of confirmative factor analysis, as the assessment of the normality is considered, critical rate from the aspect of multivariate (Mardia) values was 24.659. Since the scale's critical rate in terms of experience inertia was 1 item bigger than 10, this was not included to

Table 1. No. of questions for each construct and its Cronbach's α .

Variable	Constructs	No. of questions	Cronbach's α
Knowledge Inertia	Learning inertia	7	0.82
	Experience inertia	7	0.73
	Total	14	0.77
Organizational Learning	Commitment to learning	4	0.78
	Shared vision	4	0.84
	Open-mindedness	4	0.78
	Intra-organizational knowledge sharing	5	0.79
	Total	17	0.88
Organizational Performance	Learning and development dimension	4	0.88
	Student dimension	4	0.88
	Productivity dimension	4	0.91
	Internal processes dimension	4	0.90
	Total	16	0.99

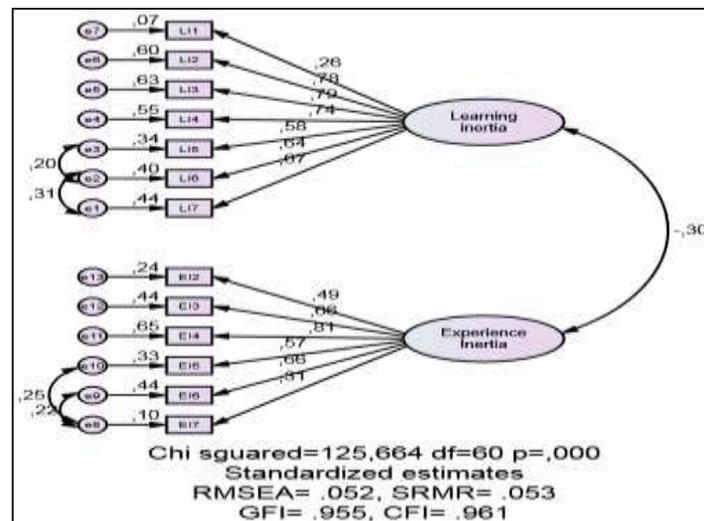


Figure 1. Confirmatory factor analysis diagram of the knowledge inertia scale.

the analysis in the next step. In this case, as a result of the analysis that was performed by considering MI (Modification Indices) in confirmative factor analysis of "Knowledge Inertia Scale" that consists of 13 items, the fit values were found to be RMSEA=.052; SRMR=.053; χ^2/df (CMIN/DF)=2.09; GFI=.955; CFI=.961; AGFI=.932 and NFI=.928. This result shows that fit values of the model are acceptable and at desired level.

Organizational learning scale

For measuring the level of organizational learning, a scale developed by Calantone et al. (2002) was used. The scale that was

adapted by the researcher to Turkish language consists of 17 items which has total 4 dimensions called commitment to learning (4 items), shared vision (4 items), open mindedness (4 items) and intra-organizational knowledge sharing (5 items). Contributors expressed their level of acceptance with ad Likert type scale graded from 1 to 5: *I strongly disagree: 1 point; I disagree: 2 points; I am neutral: 3 points; I agree: 4 points; I strongly agree: 5 points.*

As a result of the analysis performed on data obtained from this study, Cronbach Alpha coefficient in terms of commitment to learning was found to be .78, while it was .84 in terms of shared vision, .78 in terms of open mindedness and .79 in intra-organizational knowledge sharing (Table 1). Additionally confirmative factor analysis diagram of the scale is shown in Figure 2.

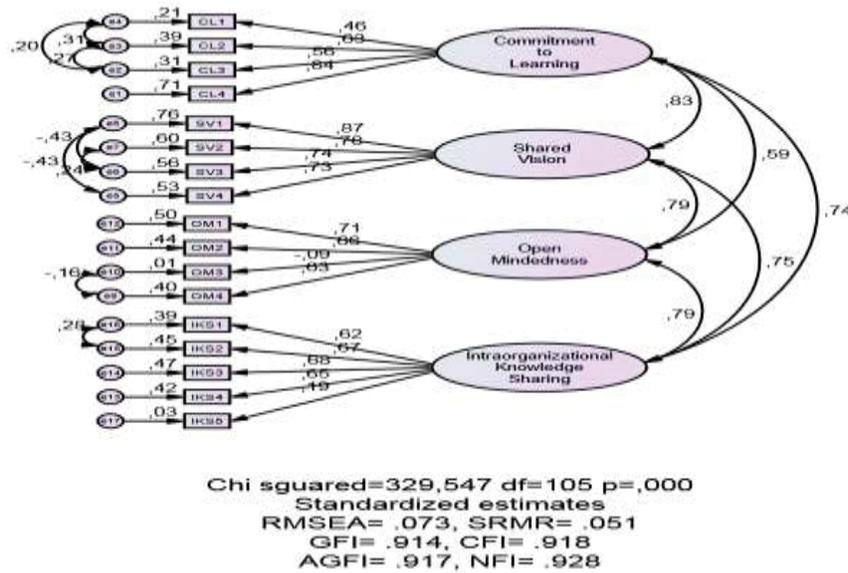


Figure 2. Confirmatory factor analysis diagram of the organizational learning scale.

As a result of confirmative factor analysis, as the assessment of the normality is considered, critical rate (c.r.) from the aspect of multivariate (Mardia) values was 44.451. Since there was no items whose critical rate is bigger than 10, all the items were included for the next step. In this case, as a result of the analysis that was performed by considering MI (Modification Indices) in confirmative factor analysis of "Organizational Learning Scale" that consists of 17 items, the fit values were found to be RMSEA=.073; SRMR=.051; X²/sd (CMIN/DF)=3.14; GFI=.914; CFI=.918; AGFI=.917 and NFI=.928 This result shows that fit values of the model are acceptable and at desired level.

Organizational Performance Scale

For measuring the level of organizational performance, a scale developed by Bayraktaroğlu and Yılmaz (2012) was used. The scale that was developed to measure organizational performance of private sector organizations consists of 16 items with 4 dimensions called learning and improvement (4 items), customer (4 items), financial (4 items) and internal processes (4 items). Contributors expressed their level of acceptance with Likert type scale graded from 1 to 5.

This scale was rearranged in line with the purpose of this study and the literature as total of 16 items consisting of 4 dimensions called learning and improvement (4 items), student (4 items), productivity (4 items) and internal processes (4 items).

As a result of the analysis performed on data obtained from this study, Cronbach Alpha coefficient in terms of learning and improvement was found to be .88, while it was .88 in terms of student, .91 in productivity and .90 in internal processes (Table 1). Additionally confirmative factor analysis diagram of the scale is shown in Figure 3.

As a result of confirmative factor analysis, as the assessment of the normality is considered, critical rate (c.r.) from the aspect of multivariate (Mardia) values was 59.272. Since there was no items whose critical rate is bigger than 10, all the items were included for the next step. In this case, as a result of the analysis that was

performed by considering MI (Modification Indices) in confirmative factor analysis of "Organizational Performance Scale" that consists of 17 items, the fit values were found to be RMSEA=.078; SRMR=.033; X²/sd (CMIN/DF)=3.46; GFI=.919; CFI=.958; AGFI=.911 and NFI=.943 This result shows that fit values of the model are acceptable and at desired level.

Additionally, for testing the reliability of the scales used in this study, in other words, in order to understand the internal consistency; when we look at the total reliability coefficients of the scales alongside the reliability coefficients about sub dimensions of each scale given above; as reliability coefficient of Knowledge Inertia was found as Alpha= .77, as reliability coefficient of Organizational Learning Scale was found as Alpha= .88 and as reliability coefficient of Organizational Performance Scale was found as Alpha= .99. Cronbach Alpha reliability coefficient is a scale for internal consistency between test grads of a scale. A value of 0.70 and above is accepted sufficient for test reliability (Büyükoztürk, 2012). Cronbach Alpha coefficients for internal consistency of the scales are calculated in accordance with sub dimensions and the results are given in Table 1.

FINDINGS

Correlation analysis

Arithmetic mean and standard deviation values related to dependent and independent variables of this study and correlation coefficients between these variables are given in Table 2.

According to data in Table 2, participant teachers' perception levels in terms of experience inertia (X=3.47) was higher comparing to learning inertia (X=2.21). Highest grade mean in terms of organizational learning dimensions was in commitment to learning dimension

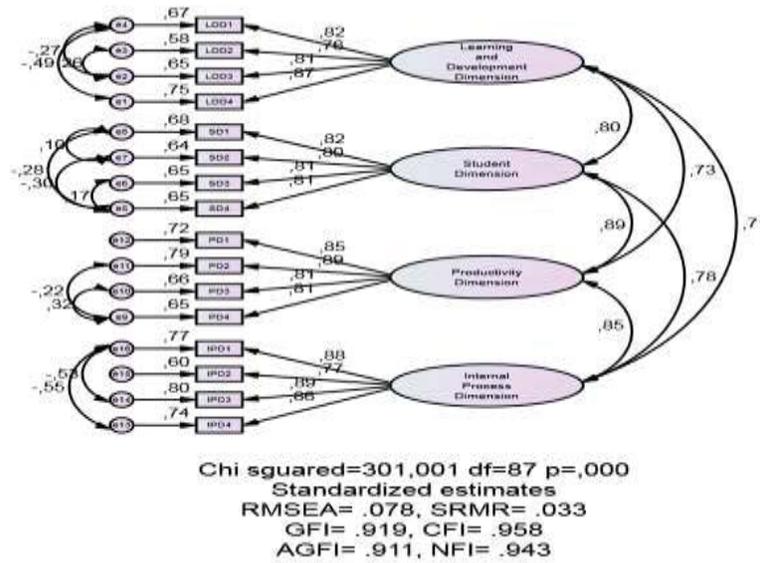


Figure 3. Confirmatory factor analysis diagram of the organizational performance scale.

Table 2. Descriptive statistics and correlation matrix of constructs.

Constructs	\bar{X}	S	1	2	3	4	5	6	7	8	9	10
1.Learning inertia	2.21	.77	(0.82)									
2.Experience inertia	3.47	.61	-0.32**	(0.73)								
3.Commitment to learning	3.06	.82	-0.26**	0.28**	(0.78)							
4.Shared vision	2.97	.87	-0.24**	0.23**	0.64**	(0.84)						
5.Open-mindedness	3.03	.62	-0.27**	0.17**	0.40**	0.61**	(0.78)					
6.Intraorganizational knowledge sharing	2.95	.71	-0.21**	0.18**	0.52**	0.64**	0.54**	(0.79)				
7.Learning and development dimension	2.83	.98	-0.08**	0.08**	0.43**	0.50**	0.34**	0.56**	(0.88)			
8.Student dimension	3.16	.95	-0.30**	0.08	0.43**	0.45**	0.24**	0.47**	0.73**	(0.88)		
9.Productivity dimension	3.19	.94	-0.06**	0.11*	0.40**	0.47**	0.24**	0.49**	0.66**	0.80**	(0.91)	
10.Internal process dimension	3.05	.90	-0.12*	0.13**	0.43**	0.55**	0.34**	0.51**	0.67**	0.73**	0.80**	(0.89)

Note 1: *p-value <0.05, **p-value <0.01, N = 405. Note 2: Numbers in parentheses indicate the Cronbach's α of constructs.

(\bar{X} =3.06), as lowest grade mean was in intra-organizational knowledge sharing dimension (\bar{X} =2.95). Highest grade mean in terms of organizational performance was in productivity dimension (\bar{X} =3.19) as lowest grade mean was in learning and improvement dimension (\bar{X} =2.83). Relations that occur between variables of the study are explained below:

(1) *Relationship between knowledge inertia and organizational learning:* Experience inertia has a positive relation with organizational learning dimensions such as commitment to learning (r = 0.28) shared vision (r = 0.23), open mindedness (r = 0.17) and intra-organizational knowledge sharing (r =0.18). This situation

shows that employees that have a high learning inertia are sufficient in performing organizational learning. On the other hand, learning inertia has a negative relation with organizational learning dimension consisting of commitment to learning (r = -0.26), shared vision (r = -0.24), open mindedness (r = -0.27) and intra-organizational knowledge sharing (r = -0.21). This situation shows that employees with high learning inertia lower the organizational learning capacity.

(2) *Relationship between knowledge inertia and organizational performance:* Experience inertia has positive relation with organizational performance dimension such as learning and improvement (r=0.08), student (r =

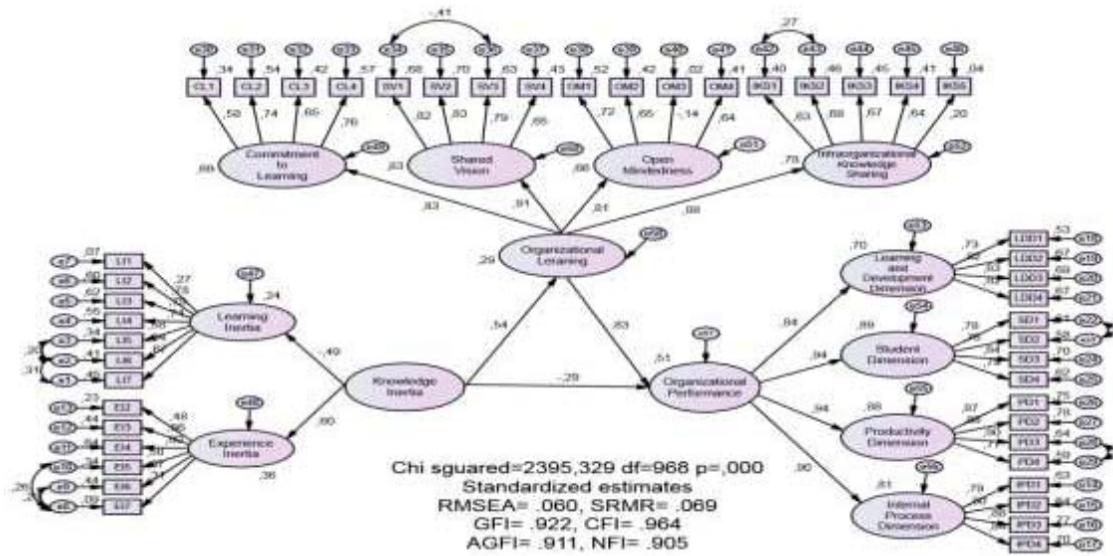


Figure 4. Structural Equation Modelling and Analysis Results of Hypothesis.

0.08), productivity ($r = 0.11$) and internal processes ($r = 0.13$). In other words, experience inertia has a bigger influence in raising organizational performance. However, Learning inertia has a negative relation with organizational performance that is consisted by dimension such as learning and improvement ($r = -0.08$), student ($r = -0.30$), productivity ($r = -0.06$) and internal processes ($r = -0.12$). This means, existence of a high learning inertia between employees has got a lesser impact on increase of organizational performance.

(3) *Relationship between organizational learning and organizational performance:* Commitment to learning has a positive relation with organizational performance dimensions such as shared vision, open mindedness and intra-organizational knowledge sharing; learning and improvement, student, productivity and internal processes. This situation shows that organizational learning at a high level increases organizational performance.

Correlation analysis only reveals the relation level between structures. Structural equality model analyses must be performed in order to reveal the direct and indirect impacts between structures, and even to reveal the mediator variables

Structural equation model

In this part of the study, a model showing the influence rate of knowledge inertia, organizational learning and organizational performance to each other and the explanation rate of each other is used. While this model

was developed, testing of the studies hypotheses was considered. Structural equation model that was developed for this purpose can be seen in Figure 4.

Model's fit indexes analyzed by considering the MI values (Modification Indices) were found as follows: RMSEA=.060; SRMR=.069; CMIN\DF=2,475; GFI=.922; CFI=.964; AGFI=.911; NFI=.905; Chi squared=2395,329; df=968 and $p=.000$. This result shows that the fit values of the model are acceptable and at desirable rate (Bayram, 2010; Joreskog and Sorbom, 1993; Kline, 2005; Schermelleh-Engel and Moosbrugger, 2003; Şimşek, 2007).

All the parameters in estimation results of the model were statistically significant. This means, values belonging to ways that were drawn from knowledge inertia to organizational learning, from knowledge inertia to organizational performance and from organizational learning to organizational performance that existed in the model were statistically significant (Table 3).

Knowledge inertia scale has two latent variables and 13 observed variables. While learning inertia latent variable has -0.49 relation (correlation, impact) coefficient, experience inertia latent variable has $.60$ coefficient.

While factor loads of observed variables in learning inertia latent variable change between $.27$ and $.79$, factor loads of observed variables in experience inertia latent variable change between $.31$ and $.80$.

Organizational learning scale has four latent variables and 17 observed variables. While commitment to learning latent variable has $.83$ relation coefficient, shared vision latent variable has $.91$ coefficient, open mindedness latent variable has $.81$ and intra-organizational

Table 3. Maximum likelihood estimation of the path parameters

Hypotheses	Parameter estimate	Standard Hata	T-value	P	Hypothesized relationship	Results
Knowledge Inertia → Organizational Learning	.28*	.05	5.51	***	Positive	Not Supported
Knowledge Inertia → Organizational Performance	-.21	.07	-2.88	.004	Negative	Supported
Organizational Learning → Organizational Performance	1.21*	.17	7.05	***	Positive	Supported

Note 1: *T-value >1.96.

Table 4. Total, direct and indirect effects

	Knowledge Inertia Effects			Organizational Learning Effects		
	Total	Direct	Indirect	Total	Direct	Indirect
Organizational Learning	.54	.54	-	-	-	-
Organizational Performance	.16	-.29	.45	.83	.83	-

knowledge sharing latent variable has .88 correlation coefficient. On the other hand, while factor loads of observed variables in commitment to learning latent variable change between .58 and .76, factor loads of observed variables in shared vision latent variable change between -.14 and .71 and intra-organizational knowledge sharing latent variable changes between .20 and .68.

Organizational performance scale has four latent variables and 16 observed variables. While learning and improvement latent variable has .84 relation coefficient, student latent variable has .94 coefficient, productivity latent variable has .94 and internal processes latent variable has .90 correlation coefficient. While factor loads of observed variables in learning and improvement latent variable change between .73 and .83, factor loads of observed variables in student latent variable change between .76 and .84, productivity latent variable changes between .77 and .87 and internal processes latent variable changes between .79 and .88.

As the results of the study were evaluated, the following conclusion was reached.

As the standardized regression (Beta) coefficients obtained from the research are reviewed (Figure 4), it is seen that knowledge inertia has a positive impact ($\beta=0.54$; $p<0,05$) on organizational learning. In line with this result, the hypothesis “Knowledge inertia affects organizational learning negatively and significantly” was partially declined. Even though knowledge inertia has affected the organizational learning positively, this impact seems significant ($p<0.05$). However when knowledge inertia level of explanation for organizational learning is reviewed, it is seen that knowledge explains the organizational learning in a rate of 29%. In other words, the change that occurs in teachers’ organizational

learning perception depends on knowledge inertia levels in a rate of 29%. This result confirms the hypothesis “Knowledge inertia explains learning significantly”.

When the standardized regression (Beta) coefficients are reviewed in terms of the hypothesis of the study, it is understood that knowledge inertia has a negative impact on organizational performance ($\beta= -0.29$; $p<0,05$). This result confirms the hypothesis “Knowledge inertia affects the organizational performance negatively and significantly”. However as it is seen in the model in Figure 4, the hypothesis with the lowest influence level is H3. This situation showed that knowledge inertia affects the organizational performance less compared to organizational learning.

As another standardized regression (Beta) coefficient that exists between the results of the study is reviewed, it is seen that organizational learning has a positive affect on organizational performance ($\beta= 0.83$; $p<0,05$). This result confirms the hypothesis “Organizational learning affects organizational performance positively and significantly”.

Another finding that comes into prominence in the model suggested above is that fact that the latent variables of knowledge inertia and organizational learning explain the organizational performance significantly in a rate of 51%. This means, that the change that occurs in teachers’ perception for organizational performance depends on their knowledge inertia level and perception of organizational learning in a rate of 51%. This finding shows that knowledge inertia and organizational learning are significant predictors (explanatory) of organizational performance. This result confirms the hypothesis “Knowledge inertia and organizational learning together explain the organizational performance in a high rate and

significantly”.

Other than direct impacts, indirect impacts can also be tested by means of structural equation models that are structured through AMOS software (Arbuckle, 2007). As a review in terms of this is made, predictive power of knowledge inertia and organizational learning that is the mediator variable on organizational performance variable can be seen clearly. Total, direct and indirect impacts between the variables of this study are shown in Table 4.

As the standardized value belonging to the total impacts is reviewed, it is seen that total predictive power of knowledge inertia for organizational learning was 0.54, for organizational performance was 0.16 and total predictive power of organizational learning for organizational performance was 0.83.

As the standardized values belonging to direct impacts are reviewed, direct predictive power of knowledge inertia for organizational learning is found to be 0.54, for organizational performance -.29, direct predictive power of organizational learning for organizational performance is found to be 0.83. As it is seen in the table, the sole difference is the predictive power of knowledge inertia for organizational performance.

As the standardized values belonging to indirect impacts are reviewed, direct predictive power of knowledge inertia for organizational performance is found to be 0.45. This situation shows that knowledge inertia has both direct and indirect impact on organizational learning; in other words, organizational learning has a mediator impact on knowledge inertia's impact on organizational performance. This result confirms the hypothesis “Organizational learning has a mediator function between knowledge inertia and organizational performance”.

DISCUSSION AND CONCLUSION

Within the context of this study, relationship between knowledge inertia, organizational learning and organizational performance and their explanation rate of each other was tested. For reaching this purpose, by examining the literature and in light of theoretical information, six hypotheses were developed. In this part of the study, orders of the hypotheses were considered and the results were compared to other study results and discussed.

Concerning the first hypothesis of the study, it was found that knowledge inertia levels of teachers affect their organizational learning positively and significantly. As it was emphasized in theoretical frame of the study, a life based on knowledge inertia decreases individuals' and organizations' performance, learning level and productivity. Hence, the knowledge inertia affects organizational learning positively contrary to the expectation that it affects organizational learning negatively. It was seen that the factor causing this kind of impact is caused by

teachers' perception for experience inertia. Not only it was seen that teachers' perception for experience inertia was higher than their perception for learning inertia, but also experience inertia has a positive relation with organizational learning, while learning inertia has a negative relation with organizational learning as it was seen in correlation analyses. Hence, it is understood that teachers with high experience inertia see themselves more sufficient in performing organizational learning. On the other hand, concerning the second hypothesis of the study, it was determined that teachers' knowledge inertia level explains their organizational learning significantly. These results comply with other study results. In their studies, Liao et al. (2008) reached the conclusion that learning inertia affects the organizational learning negatively and not only organization employees' level of learning inertia decreases the organizations commitment to learning, shared vision and open mindedness at an important rate, but also organization employees' high experience inertia increases the organization's performance in subjects of commitment to learning, shared vision and open mindedness. Sharifirad (2010) and Shalika et al. (2011) found that knowledge inertia has a negative impact on organizational learning; however as the impact learning inertia and experience inertia that are the sub-dimensions of knowledge on organizational learning is reviewed one by one, they determined that experience inertia has a positive impact on organizational learning. Thus, both in this study and other related studies, it is seen that the hypothesis about knowledge inertia's impact on organizational learning is confirmed.

Concerning the third hypothesis of the study, it was found that teachers' knowledge inertia level affects their organizational learning negatively and significantly. In other words, highness of knowledge inertia affects organizational performance negatively. In the literature, inertia is seen as a resistance to organizational performance or at least as a resistance against a basic trend/change (Miller, 1993) Besides, Hannan and Freeman (1984) argue that programs with inertia and habitats increase the reliability of an organization, while limiting its performance. As the results of studies performed related to the subject are reviewed, Greve (1998) shows that organizational inertia decreases organizational performance. In another study of Greve (1999) which he performed on a radio station employees in USA showed that organizational inertia and organizational performance have a negative relation. Miller (1993, 1994) showed in his studies that inertia causes undesired results in teacher's performance of success and this shows parallelism with results of this study.

Concerning the fourth hypothesis of the study, it was found that teachers' level of organizational learning affects their organizational performance positively and significantly. There is a strong relation between

organizational learning and organizational performance. Because, organization's performance increases in parallel with organization change rate that causes organizational performance to proceed (Dunphy and Griffiths, 1998; Robinson et al., 1997; Ho, 2011). In other studies performed on this subject, it was found that organizational learning and organizational performance has a positive and strong relationship or that the organizational learning has positive impact on organizational performance (Kassim and Shoid, 2013, Akhtar et al., 2011, Dimovski, 1994; Simonin, 1997; Lam, 1998; Sloan et al., 2002; Figueiredo, 2003; Dimovski and Škerlavaj, 2005; Škerlavaj et al., 2007).

Concerning the fifth hypothesis of the study, it was concluded that knowledge inertia and organizational learning together explain organizational performance in a rate of 51%. That means, the change that occurs in teachers' organizational performances depends on their knowledge inertia and organizational learning grade. This finding shows that knowledge inertia and organizational learning are important predictors of organizational performance. Thus, hypothesis above that aims to impact teachers' level of knowledge inertia and organizational learning on organizational performance supports this hypothesis.

In the study, a conclusion was reached that alongside the direct impact of teachers' knowledge inertia levels on their organizational performances, their organizational learning level with an mediator role has an indirect impact on their organizational performances. This means not only the organizational learning has a direct impact on organizational performance, but also knowledge inertia has a partial mediator role in organizational performance. This finding shows similarities with the finding of Jyothibabu et al. (2010) that learning as a team or learning as a group has a mediator role in increasing organizational performance.

In conclusion, it is understood that as teachers' learning inertia levels have a negative impact on their organizational learning and organizational performance, their experience inertia level has a positive impact. Based on these results, it can be said that teachers tend to increase their organizational learning and organizational performance by utilizing their professional experience. Especially, one of the most basic learning ways is to learn from past experiences. Showing effort to solve some problems by benefiting from professional and life experiences is acceptable to a certain point. However, it is an important learning obstacle to be mistaken that we learn solely based on experience, because not every experience shows itself in life in a short term. We learn something from our behaviors that we obtained in a short term. However, decisions that yield results in long term and their impact on the system integrity show that learning solely based on experience is insufficient (Senge, 1990). This is because learning not only covers the process of

following environmental changes but also manipulating internal relationships (Schein, 2004). In this context, especially those who work in organizations where learning is in the foreground must be encouraged to learn and improve; and also cultural and structural environments that provide constant learning should be built. Systems that allow the school's education performance to increase should be developed and improved. Management should provide a good working environment within the system; education quality should be increased by planning and directing organization structure and efficient communication.

Conflict of Interests

The author has not declared any conflict of interests.

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Full Length Research Paper

Exploring intercultural competence in teacher education: A comparative study between science and foreign language teacher trainers

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This study investigated the intercultural outcomes of short-term study visit programs for Foreign Language and Science teacher trainers. A mixed method including quantitative and qualitative data was used to compare the differences between the two groups' intercultural development in terms of their study field. Fantini's questionnaire was used for the quantitative data and as for qualitative data individual interviews were conducted. The results indicate significant differences in the formation of intercultural competence between the foreign language and science teacher trainers in terms of their study field. Outcomes will be discussed regarding the professional development of the educators in higher education.

Key words: Higher education, intercultural competence, study visit.

INTRODUCTION

The increase in cultural and linguistic heterogeneity and diversity in educational settings challenges contemporary education. Council of the European Union in 2009 states that greater responsibility should be taken by policy makers for supporting the learning experience of learners, teachers and trainers. It is necessary since each group has to develop, adapt and update their knowledge, skills and working practices based on the needs and changing context of education (Cedefop, 2011/2012). As a result of globalization, the changing context and diversity in education demands new notions in the literature of education and various disciplines like the concept of "intercultural communication competence (ICC)".

Towards an educational perspective intercultural competence of the teachers can be regarded as their professionalism in intercultural contexts. Instead of limiting intercultural competence as an additional or separate part of teachers' professionalism it is better to see it towards a more holistic perspective that affects all the preferences and attitudes of teachers in their classrooms, society and the world. Thus, educators need to develop intercultural competencies to adapt themselves to the requirements of an interculturalized curricula and teaching which will lead the next generation to interact more easily with the members of diverse cultures. Beginning with the globalization, cross-cultural contact is increasing at a rapid pace. In developing cultural

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sensitivity and intercultural competence, educational exchange and study abroad programs offer valuable opportunities especially for students and teachers, particularly in higher education. Exchange of academic practices in their fields, developing their language skills and intercultural communication have been the focus of these study visit programs, but there is a lack of research data illustrating their effects on intercultural competence in terms of professionalism in higher education. Whitchurch (2008, p. 394) defines professionalism in higher education as the staff who work across and beyond boundaries. He also re-defines the nature of their work which aims to contribute to the changes in working patterns in higher education (Whitchurch 2009b, p. 417).

They are expected to be international that have mutual relationships with a range of colleagues, internal and external to the university.

There are several studies which deal with intercultural competence particularly from the aspect of language learning. For instance, Sercu (2002) conducted a study with Flemish, English, French and German teachers. He investigated whether and to what extent the participants support intercultural objectives and are willing to develop the acquisition of intercultural communicative competence in their language learning classrooms. The results revealed that Flemish foreign language teachers supported the aim of interculturalizing foreign language. In a similar study, Castro et al. (2004) investigated whether Spanish teachers of English promote cultural objectives such as acquisition of intercultural competence. According to the findings, Spanish foreign language teachers were found to be willing to promote the objectives of culture learning in foreign language education. Though the cultural objectives were prioritized by the participants, intercultural objectives that aim at developing the acquisition of intercultural skills have not been found so important.

On the other hand, the studies which specifically assess the effects of study visit programs generally focus on pre-service, in-service teachers and students in terms of internationalization of higher education (Vande et al., 2012). After investigating semester-long exchange programs, micro-term sojourns, intensive summer programs, service-learning, and global internships, they advocated that the educators and students need to intervene - guided critical reflection and web-enhanced support - to get the utmost benefit from these visits.

Building upon previous research and in response to the lack of combined (qualitative and quantitative) case study research, this study specifically examines intercultural development of Turkish teacher trainers from different fields over the course of a study visit program. More specifically, the present study aims at investigating comparatively the benefits of study visit programs on the academic staff studying at the fields of foreign language and science in terms of the acquisition of intercultural

competence.

Theory and assessment of IC

Building on Fantini's (2006) framework, intercultural competence (IC) can be defined as "a complex of abilities needed to perform *effectively* and *appropriately* when interacting with others who are linguistically and culturally different from oneself" (p. 12). Theoreticians and researchers of the field have used a range of more or less related terms to discuss and describe *intercultural competence*, including *intercultural communicative competence* (ICC), *transcultural communication*, *cross-cultural adaptation*, and *intercultural sensitivity*, among others (Fantini, 2006).

Ruben's behavioral approach is one of the earliest comprehensive frameworks of the theorization and assessment of IC in the literature (Ruben, 1976; Ruben and Kealey, 1979). According to Ruben (1976), IC is the "ability to function in a manner that is perceived to be relatively consistent with the needs, capacities, goals, and expectations of the individuals in one's environment while satisfying one's own needs, capacities, goals, and expectations" (p. 336). He also adds that this ability can be best assessed by observing an individual's actions rather than reading an individual's self-reports.

Byram (1997) and Risager (2007) have also conceptualized multifaceted models of intercultural competence depending on their experiences in the European context. Byram (1997) underlines the importance of IC in foreign language education and defines it as "understanding and relating to people from other countries" (p. 5). Parallel to Byram's explanation of a successful intercultural learning, Bennett (1993), in his Developmental Model of Intercultural Sensitivity (DMIS), defines *intercultural sensitivity* as individuals' psychological ability to deal with cultural differences. For Hammer and Bennett (2001), "learners with basic intercultural sensitivity" are able to notice and acknowledge the complexity of cultural differences as "different constructions of reality" (p. 12). Grounded on Byram's theoretical foundation, Risager (2007) suggests an elaborated theorization of intercultural competence. Her conceptual framework of intercultural competence not only covers broad individual resources but also the narrow competences that can be assessed. Risager's model of intercultural competence is claimed to be broader in scope. She listed ten elements which are noticeable in linguistic developments and proficiencies:

1. Linguistic (linguastructural) competence
2. Languacultural competences and resources: semantics and pragmatics.
3. Languacultural competences and resources: poetics
4. Languacultural competences and resources: linguistic identity

5. Translation and interpretation
6. Interpreting texts (discourses)
7. Use of ethnographic methods
8. Transnational cooperation
9. Knowledge of language as critical language awareness, also as a world citizen
10. Knowledge of culture and society and critical cultural awareness, also as a world citizen (Risager, 2007, p.227)

Qualitative and quantitative IC assessment tools

Until 1996, several researchers designed their own questionnaires for survey research like Behavioral Assessment Scale for Intercultural Competence (BASIC) (Koester and Olebe, 1988; Ruben and Kealey, 1979) and the Intercultural Sensitivity Inventory (ICSI) (Bhawuk and Brislin, 1992). The Intercultural Sensitivity Inventory (ICSI) (Bhawuk and Brislin, 1992) was developed to assess to what extent an individual adapts to the differences between living in an individualistic culture (United States) and in a collectivistic culture (Japan). In the early 1990s, the Cross-Cultural Adaptability Inventory (CCAI) scales have also been developed to measure individual's level of adaptability to the cultures different from his/her own based on four dimensions: (1) emotional resilience, (2) flexibility and openness, (3) perceptual acuity, and (4) personal autonomy (Kelley and Meyers, 1995).

While assessing intercultural sensitivity and cross-cultural competence, Bennett's (1993) Developmental Model of Intercultural Sensitivity (DMIS) has been used among several assessment tools. Bennett's DMIS includes three ethnocentric stages (the individual's culture is the central worldview) and three ethnorelative stages (the individual's culture is one of many equally valid worldviews) (Bennett, 1993; Hammer et al., 2003; Paige, Jacobs- Cassuto et al., 2003). Intercultural competence, the ability to think and act in intercultural appropriate ways (Hammer et al., 2003 p.422), can be built on *intercultural sensitivity*, which is defined as the ability to incline relevant cultural differences and experience. The DMIS frames intercultural sensitivity as a cognitive developmental progression which combines ethnocentric worldview and ethnorelative worldview of the individual's behavioral and attitudinal changes.

Later, Hammer and Bennett (1998) developed the Intercultural Development Inventory (IDI) to assess an individual's, group's, or organization's level of intercultural competence through developmental process. Hammer (2007, 2009) developed the Intercultural Development Inventory (IDI) version 3. It aimed to measure the level of the worldview orientation differences and intercultural sensitivity of the pre-service educators prior to the cultural immersion experience, before and after the process. In addition to the IDI scores, questionnaires, interviews and personal journals and the researchers' field notes were used to measure the changes in the pre-

service educators' intercultural sensitivity development over the time of the immersion experience. In other words, IDI utilizes both qualitative and quantitative assessment tools. Parallel to Hammer's (2012), considerations about combining qualitative and quantitative assessment tools, the researcher's comparing quantitative and qualitative assessment instruments (Fantini, 2006; Straffon, 2003) support that qualitative instruments can be beneficial to obtain more nuanced, personalized and detailed accounts of the process of IC development that cannot be assessed by quantitative assessments alone.

Researchers who deal with qualitative instrument designs of IC assessment have suggested that IC development may be best assessed in direct assessment designs such as performance assessment (Byram, 1997), portfolio assessment (Byram, 1997, Jacobson and Schleicher, 1999) or interviews (Fantini, 2006; Straffon, 2003). Performance assessment is a kind of the elicitation that displays one's IC ability in one-to-one conversations with interlocutors. In portfolio assessment, participants' reflections about the impact of intercultural competencies on their professions or personality are documented. Interview assessment includes in-depth interviews with the participants to elicit data on the essence and development of IC (Rucks, 2012). Rucks (2012) also assumes that direct and combined assessment designs potentially offer more complete assessments of intercultural competence, despite their time-consuming nature of collecting and analyzing data.

Present study

Given the importance of teachers being intercultural competent in today's diverse classrooms not only the FL teachers and learners need to develop an awareness of IC but also the teachers or trainers of the other fields such as science and maths should integrate aspects of intercultural competence into their classrooms. Intercultural competence should not be seen as an additional or separate part of foreign language teaching only.

For the last decades, national and international institutions in Turkey have encouraged and financially supported trainers' mobility especially in academic context, in order to facilitate efficient intercultural trainers. However, the success of these programs has not been assessed particularly in terms of the academic field. Thus, this study aims to search the differences among the two main groups' level of intercultural sensitivity regarding their departments at the beginning and at the end of a short term study visit program.

Research questions

What is the impact of academic study visit programs on

Table 1. Demographic information of the participants.

Gender	Science group	FL group
Female	17	20
Male	13	10
Total	30	30
Prior intercultural experience	15	20
Total	15	20
Any other languages known except English		
German	4	20
French	7	8
Total	11	28

Table 2. Percentage Responses for English Language Ability for the participants.

	FL group	Science group
Able to satisfy routine social & limited work requirements	14%	2%
Able to speak with sufficient structural accuracy	82%	25%
Able to speak with sufficient structural accuracy & discuss professional areas	3%	50%
Able to speak English fluently on all levels	1%	10%
Speaking proficiency sometimes equivalent to an educated native speaker	0	9%
Proficiency equivalent to an educated native speaker	0	4%
Total	100%	100%

the development of IC for FL and Science teacher trainers?

Is there any difference between the FL and Science teacher trainers' IC level as a result of academic study visit program?

Does the field of study has an impact on IC levels of teacher trainers?

METHODOLOGY

Participants

In this study, two sets of samples (30 in each group) are chosen from private and state universities of Turkey. As the aim of this study is to analyze comparatively the level of intercultural sensitivity of the teacher trainers regarding their department, the sample includes totally 60 Foreign Language (FL) and Science teacher trainers. According to the results of the demographic questionnaire their ages range between 25 and 45. They have been studying in their field between 6 to 22 years. Prior to their intercultural experience, some of them have been to some European countries between 5 days and 3-4 weeks for academic and other private purposes. In this specific study, all the participants stayed in the USA attending different programs: "Fulbright FTA, Ph.D. dissertation and post-doctoral research study visit, student and exchange visitor program and intensive English program." Their stay of duration in the host culture is between 3-6 months. The demographic information of the participants' is summarized in Tables 1 and 2. Before the study, all participants were provided with written information about the nature and purpose of the research. They volunteered to be involved in the survey and interview.

Data collection and analysis

In an effort to understand better what the 60 participants experienced during their study visit, mixed methods including quantitative and qualitative data analysis were used. The quantitative data for the present study were collected between the 2012-2013 academic years by means of a survey questionnaire developed by Fantini (2006). Among all the aforementioned assessment approaches, Fantini's model of combined assessment design was used in the present study to get as complete and accurate results as possible. Fantini (2006) in his Assessment of Intercultural Competence (AIC) specified different components of IC: "characteristics of intercultural competence, domains of intercultural competence (relationships, communication, and collaboration), dimensions of intercultural competence (knowledge, attitude, skills, and awareness), language proficiency, and developmental level".

In the present study we used the 54 itemed part of the questionnaire to rate intercultural abilities of the participants at the beginning and the end of the program for *knowledge, attitudes, skills, and awareness* components.

Awareness component is described by Byram (1997) as "ability to use perspectives, practices and products in another culture" (pp.50-53). An example item of the awareness dimension in the survey is:

"I realized the importance of my negative reactions to these differences (e.g., fear, ridicule, disgust, superiority, etc.)"

The attitudinal dimension is defined as adoption of intercultural attitudes by Castro et al. (2004). An example item from the attitude dimension in the survey is:

"I demonstrated willingness to interact with host culture members."

Table 3. Pre-test and post-test scores of FL and science group.

Group	Dimension	Pre-test		Post-test	
		Mean	SD	Mean	SD
FL	Knowledge	34.80	6.04	47.77	6.26
	Attitude	50.03	7.03	57.47	3.07
	Skills	36.70	5.99	38.30	3.88
	Awareness	41.87	10.70	76.27	4.28
Science	Knowledge	19.03	11.83	43.70	6.12
	Attitude	32.10	13.07	50.10	5.42
	Skills	22.93	10.97	35.03	5.46
	Awareness	31.90	22.67	73.83	7.83

The skills dimension is defined as the acquisition of behavior in intercultural situations (Castro et al., 2004). An example item from the skills dimension in the survey is:

"I adjusted my behavior, dress, etc., as appropriate, to avoid offending my hosts"

Questions on a 0-5 point scale had descriptors ranging from 0 = none/not at all to 5 =extremely high/well. To support the validity of these findings, Fantini reported reliability estimates of 0.70 and greater and factor loadings of 0.60 and greater for each item on each of the four dimensions of intercultural competence: knowledge, attitude, skills and awareness. In the present study the same format was followed. The questionnaire was piloted with 45 teacher trainers which were assumed to be similar with the study group for reliability purposes and the Cronbach coefficient was found to be .80; and for the current study the coefficient was determined as .88.

The data analysis was conducted using the Statistical Package for Social Science (SPSS) software, version 20. A general linear model of univariate test was applied for global comparisons between the two groups and the differences on sub-components of IC at the beginning and end of the study visit program.

After the survey results were gathered, qualitative data were collected through interviews with 10 participants (5 trainers from the FL group and 5 trainers from the Science group). The audio-recorded data were analyzed through content analysis technique and the results were presented descriptively. Interview questions, adapted from Fantini (2006) were designed to support the survey questions.

RESULTS

Analysis of the survey

Before conducting an analysis of variance, group means and standard deviations related to the pre and post-test scores were calculated and are provided in Table 3.

As demonstrated in Table 3, the FL group has higher initial scores compared to the Science group. However, when the post-test scores are analyzed, increases across all levels can be noticed. In order to see whether these differences are statistically significant, a general linear

model univariate analysis of variance tests were conducted, and the results indicate significant differences:

1. between the two groups namely FL and Science teacher trainers ($p < .001$);
2. between the pre-test and post-test results for all of the four sub-components (knowledge, attitude, skills and awareness) of IC ($p < .001$);
3. and between the participants' level of IC at the beginning and end of the study visit program ($p < .001$)

When the two groups of participants' IC development at the beginning and end of the study visit program were compared significant changes were found in all four components. The frequency values of the changes observed in the four components of IC for the two groups of participants are as follows:

1. Awareness component of IC for FL group increased by 82.2 %.
2. Awareness component of IC for Science group increased by 131.5 %.
3. Skills component of IC for FL group increased by 17%.
4. Skills component of IC for Science group increased by 70.2%.
5. Attitude component of IC for FL group increased by 14.9%
6. Attitude component of IC for Science group increased by 56.1%.
7. Knowledge component of IC for FL group increased by 37.3%.
8. Knowledge component of IC for science group increased by 129.6%.

The statistical analysis of the data revealed that the most significant change was observed in the Science group when compared with the FL group. Science group's most significant change was observed in the awareness component with the rate of 131%. The least change was observed in the attitude component of FL group.

Analysis of the Interviews

The interview questions used in the study were aimed to gain a deeper insight into the participants' personal experience, personal feedback and reflection on the impact of intercultural experience during their study visit program. Content analysis was used for the analysis of the qualitative data.

Q.1. *What abilities do you think are important towards intercultural success?*

Specifically, 'awareness', 'using verbal- nonverbal language effectively', 'knowledge about culture and

cultural differences', 'appreciation of different cultures' are the most important abilities or key components mentioned by the participants. "Ability to communicate with people from host culture without any prejudice or cultural bias; being open to change and eagerness to learn more in a new cultural context; readiness to overcome the adaptation demands." "Integration, appreciation of multiculturalism, acceptance of the existence of other cultures"

Q.2. *To what extent did you develop these abilities? Why or why not?*

Generally the participants of both groups emphasized that they developed some skills of communication such as linguistic skills and personal skills. Although most of the trainers emphasized the importance of verbal skills, one of the science teacher trainers said that he developed non-verbal language skills more than the verbal language skills.

"I think I developed them a lot during my stay abroad, because I would describe myself as someone curious about other lives and open to communication"

"My stay in the USA created a large amount of awareness in my worldview. Target language exposure taught me a lot in terms of gaining new perspectives"

"I think personality and background also influence these abilities. I suppose I've developed such abilities to a great extent"

"I think my language skills are not so developed since I don't like learning FL. However, I like meeting with different people. Americans are so sympathetic people. I liked to be with them. I developed my non-verbal language more than verbal"

Q.3. *Was learning of the host language important to your success? Why or why not?*

They all agree about the importance of learning the host language both for academic and communication purposes. Interestingly, a participant from FL group mentioned that one can also interact interculturally with an average knowledge of the host language. Thus, we can conclude that there are other skills as important as language for intercultural communication.

"Yes, it played very important role even during my stay there, and my level of English eased my relations"

"Definitely. Without the knowledge of the target language, it is very difficult to talk about intercultural exchange."

"Yes. I am using the host language in my daily life while teaching, writing articles and my dissertation."

"It was a plus definitely, but I also came across people who are average target language users and perform quite well interculturally"

Q.4. *What impact did this intercultural service experience have on your life?*

'Comparison'- 'experience'- 'broader perspective'- 'richness of diversity', 'discovering new worlds', 'academic and personal development' are the most frequently mentioned terms uttered by the participants of both groups.

"Taught me a lot of things that cannot be learned in the classroom or through reading books."

"Firstly, I had a chance to see a different (and more professional) academic environment in the USA from which I can benefit from in my academic career. I got to know many people working in the same field, had a chance to take courses and counsel from professors in my field of study. Then, I developed my abilities to communicate with people from diverse cultures and countries and learned different cultural traits."

"It gave me a broader perspective of the world, of the existence of other cultures. Also, it is not easy to live alone in another country as it may bring many problems that you wouldn't imagine before your experience abroad. You learn to cope up with such situations in time. I'm sure anyone who goes abroad has a fear or the tension of the unknown at first, but I was able to overcome this feeling. It also contributed a lot to my academic development."

"I have become more tolerant and open-minded"

"It has a life-learning impact. You not only develop intercultural competence, but learning how to deal with as well in your life."

Q. 5. *How and to what extent have you utilized any of these abilities in your own life and work?*

"Vision" and "being a citizen of the world" is the framework that briefly summarizes participants' commentary about to what extent they utilized this experience in their life and work.

"Developed my vision and perspective towards life"

"I think this experience made me a more resourceful person, never sticking blindly to one solution but looking for some other alternatives with a free mind, and I became a more tolerant person to differences which improved my communications"

"All I can say is that I am still in the process of adapting and using what I have learned during my stay in the USA in the context that I am working right now"

"I could draw attention to cultural awareness and abilities in my home country during talks with friends, colleagues and family. I developed my communication skills with people from different cultural backgrounds. I understood (tried to raise awareness about) the dangers of discrimination on the basis of gender, race, ethnicity, religion or sexual orientation, etc. although there is no satisfactory non-discrimination policy in universities in Turkey and in social life in general."

"I have many friends from many countries now, and I try

to keep in touch with them as it makes me feel more like a citizen of the world. A famous novelist/scholar attended a conference we organized in Turkey as our keynote speaker. I'm quite proud and happy as I was the link between the two universities for inviting him to Turkey. Academically, now I have access to many resources in England, which wouldn't be possible if I didn't have that experience"

Q. 6. *Any additional comments?*

For most of the participants, language is regarded as the first step of experiencing cultural differences. However, they mention the role of world view and personality in experiencing and facing the cultural differences in both native and host cultures.

DISCUSSION AND CONCLUSION

The present study has certain limitations that are needed to be taken into account before considering the conclusions and their contributions to educational context. First, the size of the group for quantitative analysis is not large enough to generalize the results and findings. It only covers Turkish teacher trainers in an academic context.

Secondly, as the purpose of this study is to investigate the impact of a short-term study visit program on teacher trainers regarding to their field of study, factors such as personality, prior cultural experience, age, gender, the study time in their field and foreign language proficiency are the variables that cannot be completely controlled .

A third limitation may be found in the the scope of IC components examined in the present study. Intercultural communication researchers mainly advocate that the concept of intercultural competence is complex and includes cognitive and affective domains of behavior that is difficult to assess completely through a survey instrument (Deardorff, 2006; Spitzberg and Changnon, 2009). Although a mixed method of qualitative and quantitative research data was used, the present study assesses only IC components related to the affective domain (awareness and attitude), the cognitive domain (knowledge) and skills rather than the whole concept with its all dimensions.

Besides these limitations, the present study has some significant results. First of all, regarding the first research question, the results of both qualitative and quantitative data revealed that all the participants progressed and developed in the four components of IC during their study visit. They all indicated that they gained significant life skills: appreciation for others; open-mindedness, a deeper level of self-knowledge, new perspectives, language skills, confidence, communication both in academic and non-academic field, observation skills, a non-prejudicial attitude, patience, understanding, reasoning, self-

development, and independence. These findings are parallel with the studies of Byram (1997, Fantini (2006), Pruegger and Rogers (1994), Ruben (1976) and Straffon (2003) who also observed significant improvements in their participants on various domains of intercultural competency.

Next, the impact of academic field of the teacher trainers on IC development was investigated comparatively through four components. There are only a few studies about the teacher education study visit programs and they generally focus on students' outcomes and depend on data collected after the study abroad experience was over. The main focus of these studies is the impact of such programs on intercultural development in terms of immersion, reflection, and issues of re-entry; however, they lack the observation of the processes that the participants experience comparatively at the beginning and end of the intercultural programs (Kauffman et al., 1992; Stachowski, 1994; Taylor, 1994a, 1994b). Thus, the findings of this study might shed light to the particular issue of the comparison between the beginning and end of the study visit programs on the IC development of trainers in terms of their study field. When we rate intercultural abilities of the two groups at the beginning and end of the program, the most significant changes were observed in the Science group especially for the components of awareness and knowledge.

Actually, the most powerful change is observed in the awareness component for not only the Science group but also for the FL group. Self-awareness is an important domain of human development that will serve participants to be aware of both themselves and everything in their environment for the rest of their lives. This finding is similar to the study of Barfield (1994) who indicates that foreign language teachers in a study-abroad teacher training program became more aware of themselves, diversity in their classrooms and communities.

On the other hand, the least change was observed in the "attitude" dimension for both of the groups. Attitudinal change is described as adoption of intercultural attitudes such as showing interest in new cultural aspects (e.g., to understand the values, history, traditions, etc.). The low change of this dimension can be explained with the higher beginning level of the participants to the attitude dimension of IC experience.

Not only for "awareness" component but also for the other components of IC (knowledge, attitude and skills), the IC level of the Science group has increased more than the FL group. It may seem surprising since most of the scholars emphasize interculturality especially for FL educators as "intercultural speakers who will be capable, adaptable actors and mediators in globalised contexts" (Buttjes and Byram 1991; Byram and Zarate 1994; Kramsch 1993 and 1998). This judgment can only be confirmed when the participants' IC levels at the beginning of the study visit program are compared. FL groups' level of IC at the beginning of the study visit

experience was higher than the Science group in all four dimensions. This can be interpreted as their readiness to the intercultural differences and situations. The linguistic advantage of FL group was observed especially at the beginning of the study visit experience. However, the significant changes observed in the Science group between the beginning and end of the intercultural experience supports the idea that trainers from different fields may also develop intercultural adaptability and language proficiency alone is inadequate for IC competence. For Buttjes and Byram (1991), Byram and Zarate (1994) and Kramersch (1993, 1998) most communication is "holistic and also requires knowledge of the ways culture and language interlock and an understanding of how interaction across cultures operates". Although language proficiency is reported as an important predictor of IC and interaction with different cultures the Science teacher trainers also gained intercultural awareness despite their lower language skills they reported in the demographic information. During the interviews, some participants from the Science group highlighted the importance of non-verbal communication in intercultural adaptability. This finding is in parallel with Daniels and Redebaugh (2004) who suggest that foreign language knowledge solely is not enough to communicate with different cultures; one should also know the non-verbal language such as mimics, gestures, kinetics, colors, distance, attitudes and even perception.

Finally, this study reveals that academic field has an impact on developing IC components of attitude, skills, knowledge and awareness for Turkish university teacher trainers. It should also be known that beyond the components of IC assessed in this particular study it has a broader spectrum such as 'identity development', 'psychosocial development' (can be described as personal), 'moral or values development', 'intellectual development' and 'holistic development' conceptualized as self-authorship (Dolby, 2004; Milstein, 2005; Jurgens and McAuliffe, 2004; Lindsey, 2005; McKeown, 2009; Braskamp et al., 2009). Now that four of the IC components have been dealt with in the current study, it is obvious that further studies related to the rest of the components are needed.

Implications

The findings of the study hold important implications for educational policy makers, higher education institutions, and study abroad advocates in Turkey. Cross-cultural experience aids teachers not only to develop cultural awareness and competencies, but also reflect upon their experiences in order to broaden their vision about pedagogical approaches and methods. From this perspective, the results of the current study add new insights to the personal commitment of Vande Berg (2003) who states that the traditional goals of study abroad have historically been linguistic and intercultural-

since they have traditionally been developed for students majoring in the humanities, arts, languages, and social sciences. The new dimension of education makes IC more than the sub-field of foreign language education as it has been frequently perceived by most people. Thus, teachers and teacher trainers, not only from social sciences, humanities, arts and languages but also from all disciplines should develop an intercultural awareness in order to adapt themselves to the requirements of multicultural educational contexts. University students majoring in the fields other than humanities, arts, languages, and social sciences should also be encouraged to participate in such programs with an aim to develop their IC skills which are comparatively low. Higher educational institutions when selecting appropriate participants for sending abroad to cross-cultural mediation, when determining learning outcomes associated with a variety of educational experiences or identifying aspects of the experience that challenge and support intercultural growth should consider the requirements of a culturally responsive pedagogy.

Teachers and trainers from different disciplines should be encouraged to benefit from mobility experience in other cultures to become more culturally responsive change agents. As indicated particularly from the qualitative data, before sending educators abroad, the higher education institutions should inform them about the stages of culture shock. They should also be prepared about the ways of dealing with the difficulties emerged out of cultural, ethnic or religious differences as Jackson (2010) assumes that intercultural sensitivity competence or intercultural competencies can be taught just as the foreign language can before participants go abroad.

However, it is also significant to understand that intercultural competence should be perceived as an ongoing, lifelong process rather than as the additional part of teacher education content. Higher education institutions should encourage the teaching staff to develop their cultural experiences for professional development.

Conflict of Interests

The authors have not declared any conflict of interests.

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Full Length Research Paper

A model of e-learning by constructivism approach using problem-based learning to develop thinking skills for students in Rajabhat University

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This research aimed to develop a model of e-learning by using Problem-Based Learning–PBL to develop thinking skills for students in Rajabhat University. The research is divided into three phases through the e-learning model via PBL with Constructivism approach as follows: Phase 1 was to study characteristics and factors through the model to develop thinking skills, Phase 2 was to construct the model to develop thinking skills, Phase 3 was to study the effects of implementing from the model to develop thinking skills. The findings found that: 1. There are five factors in the model of e-learning – principle, purpose, learning and teaching process, systematic procedures, and measurement and evaluation. There are nine stages of learning and teaching activities: faced problem, defined problem, defined boundary to collect facts, setting hypothesis, allocated problem topic to group members, group members' collected data, analyzed and synthesized data, decision making, and evaluation. By the learning set through the model of e-learning with problem-based learning in constructivism approach to develop their thinking skills, students at Rajabhat University, as the subject study, significantly achieved their post-test scores more highly than their pre-test at 0.05. Otherwise, the students' opinions on the model used indicated in high degrees. The students in this study significantly showed the development of their thinking skills in higher degree at 0.05.

Key words: e-Learning, constructivism, problem-based learning –pbl, thinking skills.

INTRODUCTION

Currently, education system needs thinking skills for learners to be able to adapt to the changing society in which competition and challenges are affecting their ways of learning. Modern educational management needs to consider various approaches to respond to these needs. Technology in education offers possibility to develop thinking skill among the new generation learners. As a

result, economical and social development aims at producing learners' characteristics to be the potential population of the nation. Thinking skill indentifies the quality of the population.

Education in Thailand is in the process of developing. Various educational reforms are needed. Educational policy suggests that using technology for instruction is

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one of the key successes to improve learning outcomes. There are several learning approaches to develop education. Problem-Based Learning (PBL) is one of the possible solutions. For instance, we can develop content knowledge and critical thinking by integrating online tools based on PBL. The foundation of PBL is also related to Constructivism Theory (Schmidt et al, 2009; Sendag and Odabasi, 2009).

Educational Needs in Thailand

As Thai society has been rapidly evolved, it brings about various changes related to economic, social, political, cultural, and environment. Education reform is needed to cope with these changes. As well, education is considered as a vital tool for national development. Therefore, the development of learners' competency would be the indicator for successful society. According to the National Education Act of B.E. 2542 (1999), revised edition of B.E. 2545 (2002), the objectives of educational management cover the following principles: life-long education, social participation in educational management, on-going development in content and learning process, equality of rights in education, learners-centered education, knowledge actualization, and collaborative learning styles (Phuwidawat, 2002). Moreover, learning by self-reliance and life-long education would contribute to society in terms of knowledge acquisition. This learning approach would make Thai students become analytical, practical, and rational learners. They could adapt skills in analytical thinking synthesizing, management, situational encountering, and knowledge application to assist their lives. They could also employ those skills to prevent or to solve problematic situation in the academic learning. It is inferred that they should know how to analyze, synthesize, and acquire knowledge. Thinking skills, in short, is an important factor in the student life as it is the solution to successful education. Developing of thinking skills is the priority of learners' development toward the quality of people.

Technology in Education

Because information technology has evolved rapidly, learners need to cope with the speed of information evolution. Teachers also need to know how to manage learning tasks using different approaches. For example, Keengwe and Onchwari (2009) say that teachers face multiple challenges on how they can incorporate technology into their instruction. This is essential to consider integration of technological tools for effective instruction and learners' potential development. While Harris and Koehler (2009) argue that integration of educational technology is not only the tools used, but also particularly,

the learning process changes that it brings to the nature of content area learning. Galinsky also states, teachers should encourage students with first hand experiences to enable them to explore and form their own theories. This also gives them a chance to form a community of learners (Galinsky, 2010). Therefore, technology in education deals with integration of the tools to makes changes on learning process based on the objectives to enhance learners' experiences.

Problem-based learning in thinking skill development

Problem-Based Learning (PBL), according to Duch et al. (2001), emphasizes on learners to be able to solve problems systematically. It encourages them to develop quality of thinking, analyzing, and synthesizing. PBL persuades learners to incorporate logic and consideration in making decision. Moreover, PBL assists situational problem solving that students are encountering from teachers' assignment. Students can adopt classroom PBL skill to practice in real life conditions (Wannapiroon, 2008). In the long-run, after gaining extensive skill, PBL would contribute to learners' proficiency which results as the increasing potentials of the nation's population.

Skill levels can be classified into three categories: Basic Level refers to knowing and organizing skills. Intermediate Level comprises applying, analyzing, generating skills. Advanced Level covers integrating and evaluating skills. PBL can be manipulated for developing learners' thinking skills by predicting their learning process through problem solving. Davis and Rimm (1994) and Higuchi and Donald (2002) found that PBL can be a tool to encourage thinking skill. It is necessary to include PBL in appropriate procedure of progression and practice. Application of PBL in practice results in development of thinking skill (Tarasana, 2003). It is important to balance the content alongside with objectives to achieve optimum learning skills and process. Teachers have to test and evaluate learners' thinking skills in appropriate parameters. Thus, using PBL, learners would become the quality students who are able to justify their learning styles according to the changing situation.

PBL and e-learning is a perfect blend of thinking skill development. They can be a cutting-edge instructional tool. Particularly, in current age of instructional media, people across the world are intensively using telecommunication and information technology to search and share knowledge over the Internet. e-learning represents the effective channel for instruction over a large number of learners. Both teachers and learners who employ PBL by using e-learning tools can demonstrate presentations, conduct learning activities, and do interaction over the Internet. Such channel not only connects but also integrates learning content to the learners in the natural and efficient manners. Learners are able to develop their

basic knowledge and thinking skills to achieve their life growth. They also obtain rationalized skills for different ranges; from self-development to social and national development. The optimum merger of PBL e-learning model should blend the implicit knowledge with thinking skill as the learning method.

Consequently, this study is interested in formulating an e-learning model based on PBL and the Constructivism approach in order to develop thinking skill among subject students from Rajabhat University students in Thailand. The study aimed to find out proper components and models for developing thinking skill.

METHODOLOGY

This study is the research and development work which aimed to formulate the model for PBL online instruction. There are three main phases of methodology as follows:

Phase 1: Study and Survey of Online Instructional Model and Current Online Instruction. There are two steps as follows:

Step 1: Study of characteristics and elements of online instructional model based on PBL Constructivism. This initial phase involves seven areas of scholarly literatures: teaching model, online instruction, Constructivism learning theory, problem-based learning, thinking skills, principles of instructional design, and contemporary conditions and needs of online instruction. These are necessary in formulating appropriate model based on related theories and concepts. The researchers brought the literature reviews for synthesis and analysis to define the research framework and other necessary components.

Step 2: Survey of conditions, usage, and needs in online instruction. The areas of questions covered the application of how to use the Internet for educational and instructional purposes. The possible research framework was administered on two sampling groups: lecturers ($n=338$) and students ($n=375$). The population of the lecturers is selected by using Stratified Random Sampling method from total population of 2,732 in 40 Rajabhat University of the academic year 2011. Sampling size is determined by Krejcie and Morgan's table at 95% significant level (Krejcie and Morgan, 1970). Similarly, the population of the students was selected by the same criteria from total population of 14,263 who are studying in the second year in 40 Rajabhat University of the academic year 2011. The sampling of 375 students was based on the proportional allocation method. Subjects from the lectures and students groups were then asked to complete the questionnaires, surveying their current situation, usage, and need in online instruction.

The questionnaire was based on areas indicated by research framework and administered separately between each group. Prior to administration, the questionnaires were validated by the major advisor and three experts who have experience in conducting research in graduate level. It found that each questionnaire yielded the Cronbach's alpha coefficient value of 0.904 and 0.894, respectively.

Phase 2: Development of online instructional model based on PBL Constructivism. Theoretical and designing frameworks are two main concepts concerning PBL, learning resources, and academic strategy. There are three steps as follows:

Step 1: Drafting a model towards informatics theoretical and

designing framework and the survey output of the lecturers and students usage.

Step 2: Examining the properness of the model by the five experts in instructional design. According to Figure 1, the experts suggested to include Constructivism theory to the 3rd component because this principle will be the underlying scholarship of how to develop thinking skill of the learners.

Step 3: Constructing tools to accompany the model: online lessons on the Learning Management System –LMS, achievement tests, thinking skill test, and questionnaires.

Achievement test is 4-multiple-choice test; the correct answer value is 1 point while incorrect one is 0. Total questions in this test are 40. It has Difficulty Index between 0.25-0.75, Discrimination Index between 0.24-0.69, and Reliability Index is 0.76. Thinking skill test is 4-multiple-choice test: the correct answer value is 1 point while incorrect one is 0. Total questions in this test are 59. It has Difficulty Index between 0.25-0.79, Discrimination Index between 0.22-0.78, and Reliability Index is 0.72. Questionnaire aimed to survey the opinions of the students who participates in the online instruction. It is 5-level Likert's scale.

The online lesson is constructed on the Moodle LMS platform. Draft of the lesson includes flowchart and storyboard of the problem-based scenarios. It was tested by the major adviser and experts for content and quality prior to implementation.

Phase 3: Evaluation of the online instructional model. This aimed to find the effectiveness and efficiency of the model, as well as conditions and processes that enhance the learners. The quantitative method was used by a comparison of scores on learning achievement, thinking skill, and opinion of learners as the users of online instructional model. The sampling group, through cluster sampling method, in this study was 22 undergraduates majoring in computer management, Roi-Et Rajabhat University, academic year 2012 third-semester class enrollment in the course of Information Technology Operation. All students took the course for the first time and separately from the reliability analysis group.

The research tools of the model in phase 3 of online instruction aimed to develop the model, to find out the thinking skill, learning achievement, and users' opinion comprising. The tools were as follows: 1) PBL online instructional model based on Constructivism that encourages thinking skill among Rajabhat University undergraduates, 2) thinking skill test which is covered skills on: organizing, applying, analyzing, knowledge generating, integrating, and evaluating., 3) an achievement test which reflects content knowledge on the course objectives, and 4) questionnaire of the model users which indicates opinions and experiences from using online learning system.

Implementation of the experiment began by introducing learners to online learning model using classroom instruction and various tools such as chat room, web board, and e-mail. There were 12 weeks of the course while 1st week was pre-test and 12th week was post-test on achievement tests, thinking skill test, and questionnaires. Statistics used are Dependent t-test for achievement test, One-way repeated measurement ANOVA for thinking skill, Mean and Standard Deviation for opinions on model usage. Research design is the One-group Time-series shown in Table 1.

RESULTS

The characteristics of the developed model focused on essential skills of learning that learners could gain from

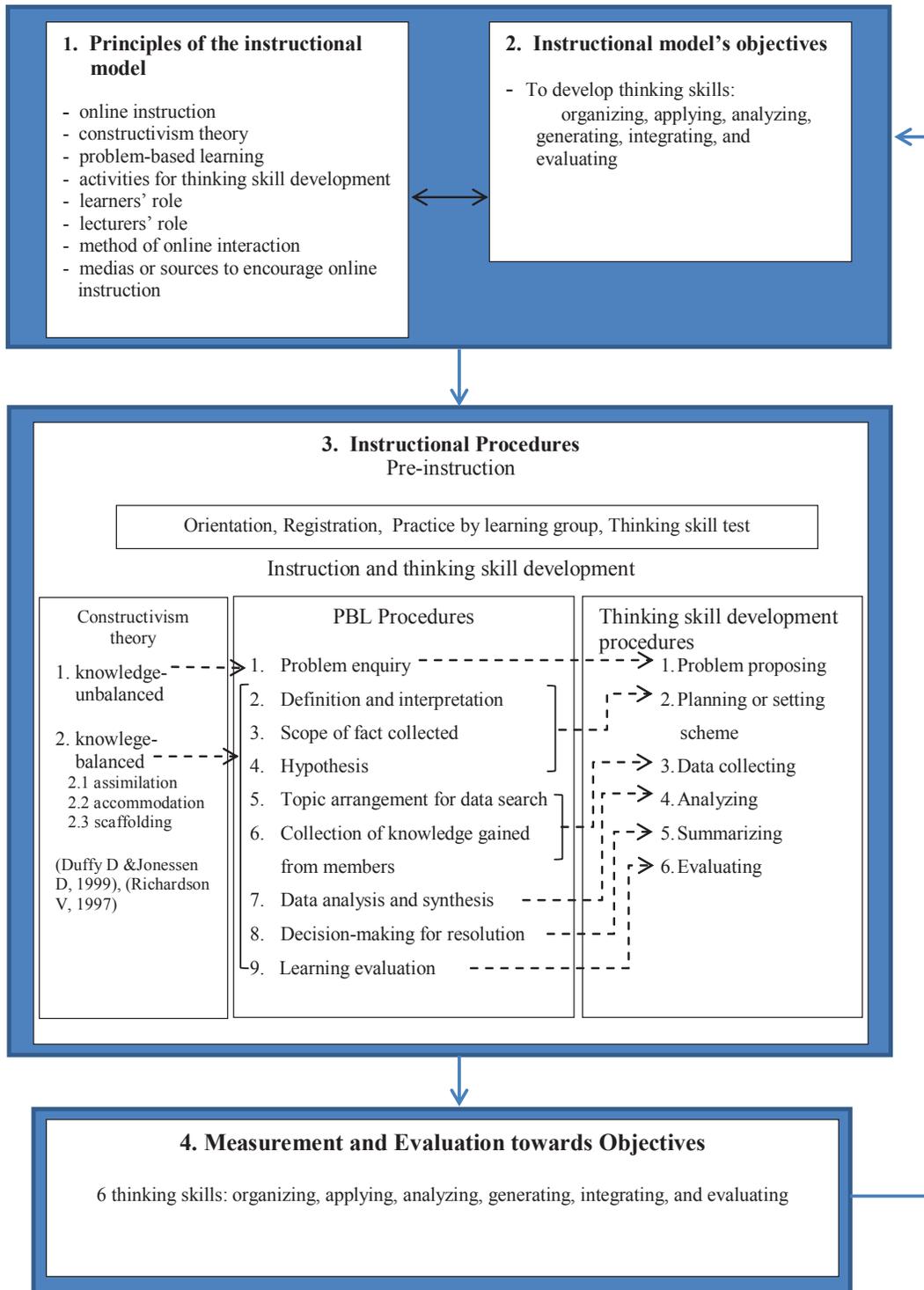


Figure 1. A model of e-learning by constructivism approach using problem-based learning to develop thinking skills for students in Rajabhat University

their potentialities to proficiencies. It is believed that both of the lecturers and the students are taken their learning together. An instructional scheme should emphasize a

process of knowledge-based from learners; then, the outcome becomes appropriate. Otherwise, a model of social interaction underlines process skills as follows,

Table 1. One-group Time-series Research Design.

Group	Time				
	T1, Y1	X	Y2	X	T2, Y3
Experiment					

X = Online Instructional Model; Y1 = 1st round of Thinking Skill Test; Y2 = 2nd round of Thinking Skill Test; Y3 = 3rd round of Thinking Skill Test; T1 = Pre-test of Achievement Test; T2 = Post-test of Achievement Test.

1. The five component model: 1) basic principles, concepts, or theories of the model, 2) objectives of online instructional model, 3) teaching methods and activities, 4) systematization, and 5) model's measurement and evaluation.
2. The two step procedure of instructional management: pre-instruction and instructional organization; then, thinking development.
3. Activities in the instructional scheme involve the integrated steps between PBL and thinking skill learning activities towards nine steps: 1) problem enquiry, 2) definition and interpretation, 3) scope of fact collected, 4) hypothesis, 5) topic arrangement for data search, 6) collection of knowledge gained from members, 7) data analysis and synthesis, 8) decision-making for resolution, and 9) learning evaluation.

The online instructional model was developed by three aspects: concepts, significant components relevant to the study, and situations/ usages and needs of online instruction. Hence, the study components had been set and organized: instructional procedures, measurement and evaluation, conventional assessments, and examination of the online instructional model's effectiveness. In line with constructivism, the components of this online instructional model towards Problem-Based Learning, aiming to encourage thinking skill for the undergraduates from Rajabhat University, can be concluded by the diagram as shown in Figure 1.

The findings of the developed online instructional model can be concluded as follows. The learners of this model obtained higher score achievement in the posttest with .05 statistical significance (Table 2).

The mean score from the thinking skill test from round 1 was 28.77 (SD = 7.37) at 48.76%; the score from round 2 was 32.32 (SD = 6.05) at 54.77%; and the score from round 3 was 36.14 (SD = 6.02) at 61.25% (Figure 2). To demonstrate the development of thinking skill through plotted graph, the means scores from all of the 3 rounds are in Tables 3 and 4.

The undergraduate students who had learned through the developed online instructional model in constructivism towards Problem-Based Learning to encourage the thinking skill showed their higher skill at .01 statistical significance.

The students gave more highly degree of their opinions in this developed online instructional model and the highest degree for overall opinion ($\bar{X} = 4.53$, SD = 0.62). The highest degree of the opinion showed in the aspect of 'more lecturers' meeting' ($\bar{X} = 4.73$, SD = 0.46) and that of 'more enjoyable learning' ($\bar{X} = 4.73$, SD = 0.46); followed by 'more friends' connection' ($\bar{X} = 4.68$, SD = 0.57), more enthusiastic in learning ($\bar{X} = 4.68$, SD = 0.482), and more eager to learn ($\bar{X} = 4.64$, SD = 0.49).

Regarding the students' recommendation for this online instructional model, it is revealed that this kind of learning gave them an opportunity to exchange their learning among friends in the class. They gained more understanding of the lessons and how to use the technology as well as searching for information in practice.

DISCUSSION

The findings of this study can be discussed as follows. Considering the model of online instruction through constructivism towards Problem-Based Learning –PBL to implement the undergraduate students from Rajabhat University, it was developed by principles, concepts, and theories of online learning, constructivism theory, PBL, and thinking skill; then, analyzed, synthesized, and constructed its learning processes. Subsequently, such model comprises five components: 1) basic principles, concepts, or theories of the model, 2) objectives of online instructional model, 3) teaching methods and activities, 4) systematization, and 5) model's measurement and evaluation.

The teaching method and activities along with this developed online instruction consist of two steps: 1) pre-instruction is the step of learners' preparations by orientation, registration guideline, learning group arrangement, and thinking skill pretest; and 2) the step of instructional organization; then, thinking development with PBL activities through primary seven scales in 10 sub-stages as follows.

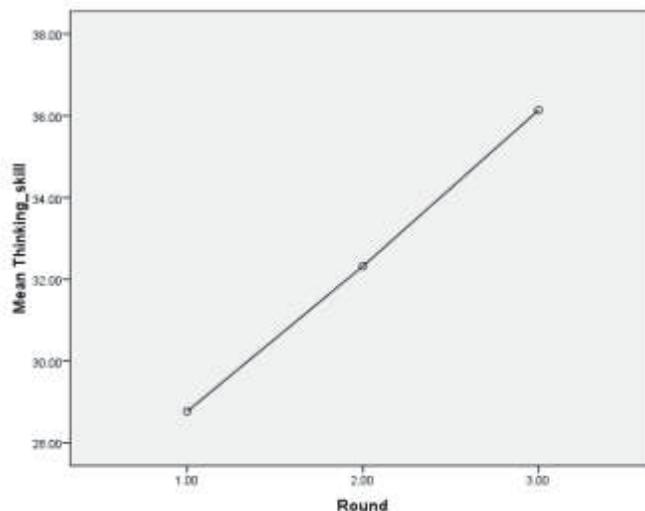
- Stage 1: Content study
- Stage 2: Problem presentation
- Stage 3: Problem solving planning and approach setting; these are- definition and interpretation, scope of fact collection, hypothesis
- Stage 4: Data collection: topic arrangement of data search for group members, collection of knowledge gained from members and applied for resolution
- Stage 5: Analysis: data analysis and synthesis
- Stage 6: Conclusion: decision-making for resolution
- Stage 7: Evaluation: learning evaluation

In reference to the teaching method and activities through

Table 2. Result of comparison between Pre-test and Post-test.

Learning output	Pre-test		Post-test		df	t	p
	\bar{X}	S.D.	\bar{X}	S.D.			
Learning achievement	13.73	4.85	22.36	4.67	21	7.4**	.000

** Statistical significance level at .05

**Figure 2.** The means score of thinking skill test of 3 rounds.**Table 3.** Mean Score of Thinking Skill Test

Thinking Skill Test	1st Round (Total score 59)	2 nd Round (Total score 59)	3 rd Round (Total score 59)
Mean	28.77	32.32	36.14
S.D.	7.37	6.05	6.02
%	48.76	54.77	61.25

Table 4 Result of thinking skill comparison in 3 rounds

Criteria	Value	Hypothesis df	Error df	F	p
Wilk's Lambda	.296	2.00	20.00	23.747	.00

** Statistical significance level at .01

the concept of learning management via webpage, Suriyakrai (2007) proposed two stages of learning procedures: preparation stages comprising orientation, evaluation of learning styles, registration, pretest; and classroom instruction. These are agreeable to Ally's concepts (2004) of various activities for learning on the webpage to achieve its learning objectives. The

developed online instructional model gave higher learning achievement in the posttest statistical significance at 0.05. This showed that learners could develop their learning achievement through this model. In accordance with Bamroongcheep (2008)'s findings in constructivism webpage instruction for creative thinking development, it showed that learners gained higher learning achievement

from the posttest with statistical significance at 0.01. The study of 'Learning management of e-Learning system towards PBL in university level' from Louhapensang (2006) also showed the higher learning achievement in the posttest with statistical significance at 0.01.

The developed model of online instruction initiatively affected the learners' thinking skills. In other words, the learners could develop their thinking skills towards

Problem-Based Learning activities which challenged the learners in their learning processes. Moreover, those activities could fairly respond the diversity of the learners. The problem-based became a learners' stimulus, especially the connections of their former experiences; then the learners were enjoying while studying and were able to search for correct answers in each question. The study of 'an encouragement of advance thinking skills in undergraduate majoring in education' from Khemmani (2006) also found that there were three procedural guidelines to develop the advance thinking skills: 1) Providing factors and environment of thinking such as an encouragement of brain development factors, thinking environment, and characteristics of a thinker; 2) Applying the curriculum/ courses/ programs/ processing media to encourage thinking skills such as directly using media to develop thinking skills and providing courses to promote thinking; and 3) providing learning activities for thinking skill development such as teaching through thinking encouragement styles and integrating the thinking skill with the content learning.

The developed model can be implemented in curriculum by the institutional support. Universities need to establish policy to include e-learning on various courses. Implementation of e-learning can be either partial or total instruction while traditional face-to-face instruction is still necessary.

Conclusion

This model for online learning based on Constructivism theory could promote thinking skills for university students. As in current Information Age, the nature of teaching and learning is shifting to Web-based instruction, which includes self-paced e-learning and lived e-learning. Therefore, we should develop thinking skills by using a social process. Teaching activities by this model is a blend between PBL and thinking skills development. Results from the implementation of online learning model found that they could develop higher thinking skills with statistical significance level of .05. They also showed significant increasing opinions from learning in online class

Suggestions

1. Adoption of online instructional model based on PBL

Constructivist approach for thinking skills must be prepared and allocated needed resources adequately and effectively such as software, laboratory, instructional materials, and the Internet network.

2. Instructors and learners need to understand the process of teaching and learning. They have to participate in various activities in group activities and online discussions via chat to enhance knowledge sharing process.

3. Instructors' roles have to be diversified as facilitator, manager, planner, consultant, and assessors of the tasks of learning. Learning independently encourages learner to learn according to the activities in the instructional design.

4. Learners have to actively play a role and realize that learning is a duty. They should be interested in group activities and cooperative learning and sharing knowledge with group members.

Limitation of this research

The experimental design was limited because there was only one group; no control group in this study. In the future work, the study using model of online teaching based on PBL Constructivism approach should compare the research findings between the experimental group and control group taught in the regular instruction.

Conflict of Interests

The authors have not declared any conflict of interests.

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Full Length Research Paper

Thinking styles of teachers, principals, and inspectors

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Much of current studies focus on the investigation of the thinking styles of students and teachers. However, exploring school administrators' and inspectors' thinking styles is also critical for increasing students' achievement at school. For that purpose, this study was performed to determine the thinking styles of teachers, principals, and inspectors who work in primary education. Thinking Styles Inventory (Stenberg & Wagner, 1992), and a questionnaire developed to collect demographic information on the participants were used. The participants of this study included 737 teachers, school principals, and inspectors working at primary education institutions in Turkey. All the data were analyzed through descriptive statistics, t-test, and variance analysis. Some of the significant findings of the research were as follows: (1) most frequently preferred thinking styles of teachers, managers, and inspectors were hierarchic, executive, and legislative while the least common were conservative, local, and global; (2) thinking styles varied across status, educational background, gender and affiliation.

Key words: Thinking styles, primary education, administrators.

INTRODUCTION

Thinking style affects how individuals perceive, interact, absorb, memorize, organize, and process information. Thinking style can be defined as one's preferred way of using the abilities one has and of processing data (Sternberg, 1997). Thinking styles affect an individual's creativity as well as his outlook and path in life. Since the 1960s various theories of thinking styles have been used to investigate people's intellectual functioning (Dunn and Dunn, 1978; Gregorc, 1985; Holland, 1973; Kagan, 1966; Witkin et al., 1962). Traditional theories are limited to one-dimensional styles (e.g., impulsive style versus reflective style). Recently, more general theories of cognition, learning or thinking styles have been proposed (Biggs, 1987; Entwistle, 1981; Kolb, 1976; Stenberg, 1988, 1997; Riding, 1991). This study was based on

thinking styles constructs that have been defined by Sternberg (1988, 1997) in his theory of mental self-government.

Sternberg's thinking style construct is considered a general and parsimonious style because it has brought together various style constructs (e.g., cognitive style, learning style) (Zhang and Sternberg, 2005). Also, the theory of mental self-government provides a thinking style profile for each person instead of a single thinking style (Zhang, 2010). Sternberg (1988, 1997) asserted that people govern themselves and their mental process and form a system and constitution for this governance.

Sternberg (1997) claims that knowing students' learning style enables teachers to provide the right educational environment for students. Sternberg (1997) also asserts

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that the compatibility between students' and teachers' thinking styles will promote both learning and teaching at school. Such a concept may also be generalized for other school staff (e.g., school principal, inspector), and as long as students' and teachers' learning style matches, an educational environment will flourish.

Many of the existing studies (Ateş and Altun, 2008; Buluş, 2005; Can, 2011; Grigorenko and Sternberg, 1993; Stenberg and Wagner, 1992; Zhang, 2010) are limited to the investigation of the thinking styles of students and teachers. Thinking style of school administrators and inspectors is equally as important if one wishes to understand the underlying culture of the school. Although empirical findings for the effects of demographic variables on styles (Arslan and Babadoğan, 2005; Grigorenko and Sternberg, 1997; Koçakoğlu, 2010; Zhang, 2010; Zhang and Sternberg, 1998) are abundant for students and teachers, it is not the case for that of school principals and inspectors. Therefore, this study was designed in order to identify the thinking styles of teachers, school principals, and inspectors working at primary education institutions. Answers to the following questions were explored in accordance with this overall purpose: (a) What are the thinking styles of teachers, school principals, and inspectors working at primary education institutions? (b) Do the thinking styles of teachers, school principals, and inspectors working at primary education institutions vary? (c) Do the thinking styles of teachers, school principals, and inspectors working at primary education institutions differ across variables such gender, affiliation, educational background, and age?

Conceptual framework

Theory of mental self-government

Sternberg's theory of Mental Self-Government (1988, 1997) offers the opportunity to view internal (such as personality and skills) and external qualities (such as setting and environment) from a wide perspective. Sternberg's theory is actually a theory of thinking styles. Developed by Sternberg (1988), the Theory of Mental Self-Government is based on the assumption that humans are in need of cognitive skills that will allow them to organize and run their daily lives and activities. The thinking style of an individual is the information processing method that s/he has developed either consciously or unconsciously in order to perceive the world and actualize his/her goals. Individuals are somewhat flexible in their use of styles and individuals with a style of preference in one situation may have a different preference in another situations.

Sternberg examines mental self-government across

five different categories which include a total of 13 thinking styles. These categories are function, form, level, scope, and leaning. Thinking styles within function category are further divided into three sub-groups; legislative, executive, and judicial. This category is mainly related to creativity and planning. Although each human being has these three functions, one of the three is generally more dominant than others. The Legislative individuals like to set their own rules and do things in their own ways. The Executive individuals obey the established rules, follow the already established ways to do things, and prefer problems that are examined beforehand. Judicial thinkers also obey the rules, like judging, criticize the application process of tasks, generate and assess new ideas, and prefer problems that require analytic skills.

The form thinking style contains four sub-groups: monarchic, hierarchic, oligarchic, and anarchic. This category shows if an individual is motivated by a single goal or by multiple goals. The monarchic thinker mentally focuses on only one goal, and aims to eliminate every obstacle likely to occur. The hierarchic thinker is keen on dealing with more than one goal, s/he likes to set priorities, and s/he tends to adapt a systematic approach for problem solving. The oligarchic thinker, on the other hand, is fond of doing multiple tasks simultaneously, but has troubles in setting priority. S/he feels confused since everything is equally important for him/her; therefore, s/he generally cannot catch up with his/her work. Lastly the anarchic thinker likes doing things carelessly, and is constantly engaged in a struggle against authority.

Local and global thinking styles are two sub-groups within the level category. Global thinkers enjoy working on big abstract tasks, and are easily bored with detail while the local thinker prefers working on concrete detail oriented tasks.

The scope thinking style is divided into two sub-groups: external and internal. The internal thinker is an introvert, is topic-oriented, distant, indifferent, and asocial. S/he usually likes to work on his/her own in the way s/he wishes. The external thinker is an extrovert, and prefers working on collaborative tasks.

Learning thinking styles are divided into two sub-groups: liberal and conservative. The liberal thinker chooses to complete tasks in new ways and challenges traditional methods whereas more conservative thinkers prefer obeying the established rules and prefer to avoiding vagueness.

LITERATURE REVIEW OF THINKING STYLES

Much cross-cultural research from a theoretical standpoint has been conducted (Grigorenko and Sternberg,

1993; Sternberg, 1988; Sternberg and Wagner, 1992; Zhang and Sternberg, 2002; Zhang 2010). Likewise, studies based on theoretical analysis have also been on the rise in Turkey. Many of these studies are based on Sternberg's thinking styles inventory (Buluş, 2005; Balkıs and Işiker, 2005; Balgalmış and Baloğlu, 2010) and Kolb's learning styles inventory (Aşkar and Akkoyunlu, 1993; Ateş and Altun, 2008; Can, 2011; Koçakoğlu, 2010). Also, empirical findings for the effects of demographic variables (e.g., gender, age, income) on styles are abundant (Zhang and Sternberg; 2002). What follows is a summary of some of the studies conducted on thinking styles.

In the United States of America, Sternberg and Grigorenko (1995) conducted a series of studies to investigate thinking styles of school teachers using the Thinking Styles Questionnaires. They showed that teachers' thinking styles were statistically different in their characteristics from the ideologies of the schools. They found that older teachers tended to be more executive, local, and conservative compared to younger ones. They also found that science teachers tended to be more local than were teachers of the humanities. Additionally, teachers in urban public and Catholic schools were more conservative compared to teachers in an elementary private school. Furthermore, students from families of higher socioeconomic status and who are older siblings tended to be more legislative. Zhang et al. carried out several studies using the theory of mental self-government (Zhang, 1999; Zhang and Sachs, 1997; Zhang and Sternberg, 1998) in Hong Kong. They used the Thinking Styles Inventory (Sternberg and Wagner, 1992) for data collection. These studies showed that Thinking Styles Inventory was a valid and reliable measurement for Hong Kong university students. They also found that students' thinking styles were statistically different, depending on age, sex, college class, college major, work and travel experience. Zhang and Sternberg (2002) investigated the relationship between thinking styles and teachers' characteristics. The results showed that Teacher Candidate Forms in the Thinking Styles Inventory was a valid and reliable tool to determine thinking styles of Hong Kong teachers working at primary and secondary education institutions. Multiple regression analysis pointed to six characteristics of teachers that significantly correlated with their thinking styles. Those six characteristics were; gender, professional experience outside the school, willingness to use new instructional materials, tendency to use group projects in order to assess students' success, perceived flexibility in choosing instructional content, and assessments regarding students' qualifications.

It is also important to summarize studies undertaken in Turkey. Buluş (2005) conducted a reliability and validity

study of Sternberg's Thinking Styles Inventory on teacher candidates, and examined the relation between thinking styles and other variables such as academic achievement, gender, class, department, and perceived parental styles. Results proved that Thinking Styles Inventory was a reliable and valid instrument that could be used to determine the thinking styles of teacher candidates in Turkey. Moreover, findings pointed out that the anarchic and conservative categories had a negative relation with academic success, and thinking styles varied across gender, class, department, and perceived parental styles. Boys scored higher than girls on the judicial, anarchic, global, internal, and liberal categories. In addition, senior students scored higher on the internal category but lower on the conservative category. Analysis of differences across departments revealed that students in primary school education, social studies education, physical sciences education, and physical education scored significantly higher than students in arts and crafts education department in terms of the executive thinking style. Balkıs and Işiker (2005) studied the relationship between thinking styles and personality types of undergraduate students using Sternberg's Thinking Styles Inventory and Holland, Powell, and Fritzsche's Personality Inventory. Results of their study pointed to a significant relation between thinking styles and personality types. Moreover, another finding indicated that thinking styles differed across several variables such as gender and field of study. Yıldızlar (2010) studied the relationship between culture and thinking styles of candidate teachers who attended Atatürk Teachers Academy and at the Cyprus International University studying in the Turkish Language Teaching Department. Thinking Style Inventory (Sternberg and Wagner, 1992) was used for data collection. The study showed that the thinking styles of the candidate teachers were different for the parameters of culture and gender.

Although studies on thinking styles of teachers and students are ample, studies on thinking styles of school managers and inspectors are scarce at the global level. Cheng et al. (2001) examined the thinking styles and the relevant variables of junior high school principals in Taiwan on the basis of the theory of mental self government. They also compared the thinking styles of principals and deans. They found that junior high school principals in Taiwan preferred more executive, hierarchic, global, external and liberal thinking styles. Furthermore, the study indicated principals tended to choose teachers of with the executive thinking style as deans. Lastly, teachers with a similar thinking style to the principal tended to give more credit to their principals' leadership. Sofo (2005) examined how Chinese leaders view the thinking process, what thinking styles they value and how they prefer to think. He used Sofo's Thinking Style

Inventory and three forms of Sternberg's thinking style Inventory for the study. He also compared non-education leaders' thinking styles with educational leaders' thinking styles. He found that Chinese leaders have strong preferences for executive, judicial and legislative styles and high preferences for independent and exploring styles. He also found that the leaders have moderate preferences for inquiring and creative styles and low preference for the conditional style. Jones (2006) conducted a study to explore thinking style preferences of female college and the university president in the USA. Jones examined the thinking style of female college and the university president varied over the Carnegie classification, institutional control, highest academic degree earned, academic background, age, and total years of presidential experience. Jones found that idealist and analytical thinking styles were preferred more than the other thinking styles among female college and university presidents. Also, female college and university presidents had a neutral preference for the Pragmatist, Realist, and Synthesist styles. Balgalmış and Baloğlu (2010) examined the primary school principals' thinking styles in Turkey. They found that the most preferred thinking styles were hierarchic, executive, and external while the least common styles were conservative, oligarchic, and local. Furthermore, the researchers also found out that thinking styles of school principals differed in terms of several variables such as gender, age, branch, and school type. Legislative thinking style was determined to be positively correlated with the female principals whereas oligarchic, conservative, and local thinking styles were found to vary across age. Results also indicated that judicial and local thinking styles differed across manager's branch, and conservative and oligarchic ones varied across professional experience and seniority. As well, executive, judicial, oligarchic, anarchic, global, and conservative thinking styles all varied across school type. Yıldız (2012) studied the relationship between the social skills and thinking styles of primary school administrators in Turkey. Yıldız found that the social skills level of school administrators are at a moderate level. Furthermore, primary school administrators mostly preferred the hierarchic style and the anarchic thinking style was preferred the least. Finally, social skills and thinking styles of primary school administrators were correlated.

To summarize, a great deal of the literature is limited to the investigation of the thinking styles of students and teachers. Only a few studies were conducted with regards to primary school principals' thinking style and there are no studies reported involving school inspectors. An understanding of the thinking style of school administrators and inspectors is important if achievement at schools is to improve. Furthermore, to our knowledge,

there is no known study that compared the thinking styles of teachers, school principals, and inspectors working at primary education institutions. The current study was conducted for this purpose. Specifically, this study was designed in order to identify the thinking styles of teachers, school principals, and inspectors working at primary education institutions and compare their styles across different variables.

MATERIALS and METHODS

Measures

The Thinking Styles Inventory (Sternberg and Wagner, 1992) and a questionnaire designed to obtain some demographic information (such as age, gender, school type and seniority) about teachers, school principals, and inspectors were administered as data collection instruments. Thinking Styles Inventory (1992) was developed by Sternberg and Wagner based on the theory of Mental Self-Government (Sternberg, 1988), and adapted for use in Turkey by Buluş (2005). The Turkish version of the inventory consists of 65 items and 13 sub-groups. Sub-groups are categorized as legislative, executive, and judicial in terms of function; monarchic, oligarchic, hierarchic, and anarchic in terms of form; global and local in terms of level; internal and external in terms of scope; and liberal and conservative in terms of leaning. Each item is scored through a 7-point scale, with 1 denoting that the statement does not describe the participant at all, and 7 denoting that the statement describes the participant extremely well. Some examples of items used include: "I like projects that I can complete independently" (internal), "I like to challenge old ideas or ways of doing things and to seek better ones" (external), and "When faced with a problem, I like to solve it in a traditional way" (conservative). The internal consistency coefficient of the sub-groups was between .66 and .93.

Participants

The total number of participants was 737. This consisted of teachers, school principals, assistant principals and inspectors who were employed in primary schools within the provinces of Tokat and Samsun in Turkey. Among the participants, 542 were teachers, 77 were school principals and assistant principals and 55 were inspectors. Among them 352 were women and 322 were men. Of these, 685 participants worked at public schools, and 46 of them were employed by private schools. Participants' ages ranged from 21 to 62, with a mean of 40. The participants' mean length of professional experience was 16.7 years, ranging from 1 year to 43 years.

Analysis

Thinking styles of teachers, school principals, and inspectors were analyzed through descriptive statistics to find out the first sub-problem of the research. One way ANOVA was employed for the second objective of the study to investigate whether thinking styles of teachers, school principals, and inspectors working at primary education institutions varied. Also, a LSD post hoc test was

Table 1. The arithmetic mean, and standard deviation across thinking styles.

Thinking Styles		\bar{X}	SS
Functions	Legislative	26.22	5.11
	Executive	26.27	5.05
	Legislative	25.81	5.29
Forms	Monarchic	23.26	4.70
	Hierarchic	27.20	5.20
	Oligarchic	22.33	5.51
	Anarchic	23.37	5.05
Levels	Global	21.08	5.68
	Local	19.47	5.84
Scopes	Internal	21.70	5.80
	External	23.67	4.83
Leanings	Liberal	25.55	5.31
	Conservative	17.32	6.94

performed to examine pairwise differences. The third objective of the study was to find out whether the thinking style of teachers, school principals, and inspectors varied across age, education (highest academic degree earned), tenure, gender, and affiliation. One way ANOVA was used to examine whether thinking styles differed in terms of age, education and tenure. Again, after running one way ANOVA analysis, LSD post hoc test was used to determine the difference between averages. Further, t-test has been employed for each aspect of thinking styles to check whether thinking styles differed across gender and affiliation. The statistical software SPSS was used for all data analyses.

RESULTS

The first question of the research was examined through means and standard deviations. Analysis of what teachers, school principals, and inspectors prefer across the 13 sub-groups of thinking styles has revealed that , hierarchic (\bar{X} =27.20; SS=5.20), executive (\bar{X} =26.27; SS =5.05), and legislative (\bar{X} =26,22; SS=5,11) are the most preferred, while conservative (\bar{X} =17,32; SS=6,94), local (\bar{X} =19,47; SS=5,84), and global (\bar{X} =21,08; SS=5,68) were the least (Table 1).

One way ANOVA was used to investigate whether thinking styles differed across status of participants (Table 2). Analysis of sub components of each thinking style across participants' status separately has revealed that mean scores for teachers, school principals, and inspectors are all close. ANOVA results have indicated a significant difference among teachers', school principals',

Table 2. The arithmetic mean, and standard deviation across thinking styles preferred by teachers, managers, and inspectors.

Status	Thinking Styles	\bar{X}	SS	
Manager	Functions	Legislative	26.00	4.94
		Executive	27.65	4.66
		Judicial	26.37	4.87
	Forms	Monarchic	23.56	5.51
		Hierarchic	26.92	4.78
		Oligarchic	23.61	4.25
	Levels	Anarchic	25.08	4.68
		Global	21.65	4.91
		Local	21.31	4.96
	Scopes	Internal	23.31	5.08
		External	24.61	4.90
	Leanings	Liberal	27.07	4.74
Conservative		20.02	7.24	
Inspector	Functions	Legislative	24.80	4.90
		Executive	24.79	4.80
		Judicial	25.25	5.28
	Forms	Monarchic	23.05	4.82
		Hierarchic	25.37	5.00
		Oligarchic	21.34	5.40
	Levels	Anarchic	23.86	5.40
		Global	21.20	5.97
		Local	19.00	5.82
	Scopes	Internal	21.25	5.74
		External	23.00	4.72
	Leanings	Liberal	25.35	5.20
Conservative		16.57	6.31	
Teacher	Functions	Legislative	26.43	5.11
		Executive	26.26	5.07
		Judicial	25.80	5.36
	Forms	Monarchic	23.24	4.59
		Hierarchic	27.44	5.27
		Oligarchic	22.23	5.67
	Levels	Anarchic	23.06	5.03
		Global	20.97	5.78
		Local	19.24	5.92
	Scopes	Internal	21.50	5.91
		External	23.61	4.84
	Leanings	Liberal	25.36	5.39
Conservative		16.95	6.89	

and inspectors' preferences for executive ($F(1, 670)=5.14$, $p<.01$), hierarchic ($F_{(1,674)} =3.94$, $p<.05$), anarchic ($F_{(1,650)}=5.35$, $p<.01$), local ($F_{(1,648)} =4.18$, $p<.05$), liberal

Table 3. ANOVA results across age groups.

		30 and under		31-40		41-50		50 and over		F	p
		\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ		
Functions	Legislative	26.72	4.72	26.07	5.47	26.46	4.90	25.72	5.05	.94	.418
	Executive	26.58	5.60	26.03	5.16	26.52	4.77	26.16	4.64	.47	.698
	Judicial	25.43	6.19	25.95	5.16	25.96	5.09	25.64	4.83	.35	.787
Forms	Monarchic	23.25	4.23	22.81	5.07	23.93	4.48	22.53	4.85	2.93	.033*
	Hierarchic	27.19	5.31	27.45	5.50	27.47	4.97	26.53	4.89	.86	.457
	Oligarchic	20.07	5.40	22.90	5.32	23.25	5.59	22.02	5.47	10.10	.000**
	Anarchic	22.41	5.04	23.80	5.37	23.32	4.81	23.58	4.84	1.99	.113
Levels	Global	20.62	5.56	21.27	6.05	21.29	5.81	20.61	5.01	.63	.594
	Local	17.90	5.36	20.30	5.92	19.40	6.25	19.69	5.05	4.31	.005**
Scopes	Internal	21.66	5.62	22.07	6.22	21.44	5.83	21.62	5.20	.41	.739
	External	23.15	5.30	23.47	4.98	24.37	4.62	23.43	4.22	2.25	.081
Leanings	Liberal	24.41	5.57	25.91	5.57	25.94	5.23	25.97	4.71	2.77	.040*
	Conservative	15.32	5.98	16.93	7.11	17.80	7.24	19.05	6.72	6.27	.000**

Note. NB: Ns differ. * $p < .05$, ** $p < .01$ (two way significance level).

($F(1,665) = 3.54$, $p < .05$), and conservative ($F(1,679) = 6.91$, $p < .01$) categories. Multiple comparisons have revealed that teachers, school principals, and inspectors significantly differed in terms of their preferences for the executive category. Examination of the difference has shown that inspectors had relatively low scores for the executive thinking style than teachers and school principals. Moreover, teachers' scores for the same category were lower than those of school principals. In addition, teachers and inspectors have been found to significantly differ from each other in terms of their scores for the hierarchic category. Teachers' scores were higher than those of inspectors for the hierarchic category. Another result is that teachers and school principals have a significant difference in terms of their scores given to the anarchic classification with teachers gave relatively low scores for anarchic thinking. Besides, school principals have also been shown to have a significant difference from teachers and inspectors in terms of their scores in the local category; school principals' scores for the local category are considerably higher than those of teachers and inspectors. Results obtained from multiple comparisons have revealed that inspectors' scores for the internal thinking style are significantly higher than those of teachers and school principals. Furthermore, teachers' scores for the liberal category were significantly lower than those of school principals and inspectors. Likewise, scores given for the conservative category by the school principals were also significantly higher than those given by teachers and inspectors.

The second goal of the research was to determine if thinking style preferences of teachers, school principals, and inspectors varied across several demographic variables (such as age, education, gender, tenure, and affiliation). One way ANOVA was employed to determine if thinking styles differed in terms of age variable (Table 3). ANOVA results revealed that age is a significant variable that influenced the preferences over monarchic ($F_{(3, 642)} = 2.93$, $p < .05$), oligarchic ($F_{(3, 633)} = 10.10$, $p < .01$), local ($F_{(3, 624)} = 4.31$, $p < .01$), liberal ($F_{(3, 642)} = 2.77$, $p < .05$), and conservative ($F_{(3, 651)} = 6.27$, $p < .01$) thinking styles.

Multiple comparison results indicated that the age group between 41-50 had significantly higher scores compared to that of 31-40 and 51-60 age groups in terms of their preference for the monarchic thinking style. Similarly, results have also shown that the mean for the oligarchic thinking style of the age group of 21-30 was significantly lower from that of the age group of 31-40, 41-50, and 51-60. Further, examination of the differences displayed that the group between 21 and 30 gave significantly lower scores for liberal, local, and conservative thinking styles than the other groups. Another difference has also been detected between the 31-40 and 51-60 year age groups in terms of the conservative thinking style, suggesting that participants who are 51 years of age and over demonstrate a conservative thinking style more than the other groups.

One way ANOVA was utilized to determine if thinking styles differ in terms of the education level achieved (Table 4). ANOVA results indicated that educational

Table 4. ANOVA results across educational background.

		Associate		Training Institution		Graduate		MA Degree		F	p
		\bar{X}	σ	\bar{X}	σ	\bar{X}	σ	\bar{X}	σ		
Functions	Legislative	26.15	5.68	26.13	5.44	26.21	4.89	26.76	5.04	.07	.972
	Executive	26.31	4.67	27.05	5.13	26.05	5.08	26.73	5.27	1.04	.373
	Judicial	25.69	5.09	26.01	5.15	25.79	5.45	26.52	3.35	.16	.921
Forms	Monarchic	23.42	5.19	23.33	4.17	23.26	4.69	22.52	3.22	.18	.905
	Hierarchic	27.09	5.64	27.83	4.97	27.11	5.05	25.64	6.28	.99	.396
	Oligarchic	22.63	5.77	22.62	5.74	22.06	5.45	21.82	5.89	.50	.679
	Anarchic	23.80	4.76	23.01	5.11	23.16	5.15	23.58	4.22	.57	.633
Levels	Global	21.40	5.68	21.13	4.75	20.84	5.89	24.50	4.54	2.29	.077
	Local	21.11	5.92	19.25	5.83	18.92	5.79	19.05	4.80	4.16	.006**
Scopes	Internal	21.59	6.10	20.96	5.82	21.85	5.81	21.47	5.16	.58	.627
	External	24.40	4.57	23.94	4.80	23.31	4.85	25.26	5.58	2.37	.070
Leanings	Liberal	26.50	5.40	26.07	5.26	25.18	5.25	26	4.59	2.30	.076
	Conservative	18.30	6.97	18.63	7.36	16.49	6.67	19.60	7.71	4.51	.004**

Note: Ns differ. * $p < .05$, ** $p < .01$ (two way significance level).

background is a significant factor in the preference of local ($F_{(3, 628)}=4.16$, $p < .01$) and conservative ($F_{(3, 656)}=4.51$, $p < .01$) thinking styles. Results of multiple comparisons have shown that scores given by teachers, school principals, and inspectors, all of whom had either associate or training institution degrees, to local thinking styles were significantly different from those of participants with a graduate degree. The difference was that the ones with associate and training institution degrees preferred local thinking style more than those with higher degrees. Similarly, the conservative thinking style has been selected significantly more by teachers, school principals, and inspectors with associate and training institution degrees than those with a graduate degree.

One way ANOVA was used to find out if thinking styles differed in terms of tenure (Table 5). ANOVA results pointed out that tenure is a significant variable influencing the preferences over executive ($F_{(3, 602)}=3.49$, $p < .05$), oligarchic ($F_{(3, 593)}=7.69$, $p < .01$), local ($F_{(3, 581)}=3.44$, $p < .05$), external ($F_{(3, 599)}=5.72$, $p < .01$), liberal ($F_{(3, 597)}=3.25$, $p < .05$), and conservative ($F_{(3, 607)}=7.67$, $p < .01$) thinking styles. The results from the multiple comparison indicated a difference between the means for conservative and oligarchic categories were higher comparing to that of local, liberal, and external. The results indicated as the teachers', school principals' and inspectors' work experience increased, they tended to prefer more

oligarchic, conservative, external, and local thinking style. Also, participants with 11 - 20 years work experience had lower scores for the executive thinking style than the other groups.

T-test has been employed for each aspect of thinking style to control for differences in thinking style by gender (Table 6). T-tests indicated that gender is a significant variable for legislative ($t_{(684)}=-3.83$, $p < .01$), hierarchic ($t_{(673)}=-2.56$, $p < .05$), anarchic ($t_{(649)}=3.58$, $p < .01$), global ($t_{(641)}=3.06$, $p < .01$), local ($t_{(647)}=4.03$, $p < .01$), internal ($t_{(658)}=4.37$, $p < .01$), liberal ($t_{(665)}=2.47$, $p < .05$), and conservative ($t_{(667)}=7.37$, $p < .01$) thinking styles. Analysis of differences pointed that women scored higher on anarchic, global, local, internal, liberal and conservative thinking styles whereas men scored higher on legislative and hierarchic thinking styles.

T-tests were used for each category of thinking style to check if they differed across affiliation (Table 7). The means obtained from participants working at public and private primary education institutions have been found to be close. T-test results for legislative ($t_{(685)}=-3.93$, $p < .01$), judicial ($t_{(680)}=-3.05$, $p < .01$), anarchic ($t_{(650)}=2.98$, $p < .01$), local ($t_{(648)}=3.17$, $p < .01$), and conservative ($t_{(676)}=3.79$, $p < .01$) thinking styles were significantly different across types of affiliation. Participants working at public schools scored significantly high on the anarchic, local, and conservative thinking styles while the participants at

Table 5. ANOVA results across gender.

		Women			Men			sd	T	p
		N	\bar{X}	σ	N	\bar{X}	σ			
Functions	Legislative	363	25.55	5.02	323	27.02	5.03	684	-3.83	.000**
	Executive	352	27.02	4.72	319	26.59	5.34	669	-1.50	.133
	Judicial	354	25.57	4.99	327	26.07	5.60	679	-1.22	.221
Forms	Monarchic	349	23.49	4.62	321	23.02	4.80	668	1.28	.200
	Hierarchic	356	26.71	4.95	319	27.74	5.43	673	-2.56	.011*
	Oligarchic	348	22.48	5.14	312	22.14	5.92	658	.78	.433
	Anarchic	341	24.03	4.76	310	22.62	5.27	649	3.58	.000**
Levels	Global	340	21.72	5.32	303	20.35	6.03	641	3.06	.002**
	Local	348	20.32	5.59	301	18.48	5.99	647	4.03	.000**
Scopes	Internal	353	22.60	5.36	307	20.64	6.15	658	4.37	.000**
	External	357	23.79	4.75	313	23.57	4.93	668	.58	.557
Leanings	Liberal	351	26.05	4.81	316	25.03	5.77	665	2.47	.014*
	Conservative	362	19.07	6.69	316	15.27	6.67	676	7.37	.000**

Note. * $p < .05$, ** $p < .01$ (two way significance level).

Table 6. ANOVA results across affiliation.

		Public			Private			sd	T	p
		N	\bar{X}	σ	N	\bar{X}	σ			
Functions	Legislative	643	26.05	5.03	44	29.13	4.82	685	-3.93	.000**
	Executive	630	26.18	5.01	42	28.02	5.04	670	-2.30	.022
	Judicial	638	25.65	5.28	44	28.15	4.96	680	-3.05	.002**
Forms	Monarchic	628	23.36	4.66	43	21.93	5.20	669	1.93	.054
	Hierarchic	632	27.18	5.23	44	27.61	4.87	674	-.52	.598
	Oligarchic	619	22.38	5.45	42	21.45	6.46	659	1.06	.288
	Anarchic	611	23.51	5.01	41	21.09	5.10	650	2.98	.003**
Levels	Global	604	21.18	5.65	40	19.65	6.30	642	1.64	.100
	Local	609	19.66	5.92	41	16.68	3.71	648	3.17	.002**
Scopes	Internal	620	21.75	5.91	41	21.02	4.16	659	.77	.440
	External	629	23.67	4.90	42	23.90	3.78	669	-.29	.767
Leanings	Liberal	625	25.48	5.33	42	26.90	4.94	665	-1.68	.093
	Conservative	636	17.57	6.91	42	13.40	6.45	676	3.79	.000**

Note. * $p < .05$, ** $p < .01$ ((two way significance level).

private schools highly preferred legislative and judicial thinking styles.

DISCUSSION

The present study examined the differences in thinking

styles among teachers, school principals and inspectors. Also, thinking styles were compared in terms of age, gender, tenure, and school type. Findings of the research indicated that teachers, school principals, and inspectors preferred hierarchic, executive, and legislative thinking styles the most, and conservative, local, and global

Table 7. ANOVA results across status.

		Teacher		Manager		Inspector		F	p
		\bar{X}	σ	\bar{X}	σ	\bar{X}	σ		
Functions	Legislative	26.43	5.11	26.00	4.94	24.80	4.90	2.69	.068
	Executive	26.26	5.07	27.65	4.66	24.79	4.80	5.14	.006**
	Judicial	25.80	5.36	26.37	4.87	25.25	5.28	.73	.478
Forms	Monarchic	23.24	4.59	23.56	5.51	23.05	4.82	.20	.815
	Hierarchic	27.44	5.27	26.92	4.78	25.37	5.00	3.94	.020*
	Oligarchic	22.23	5.67	23.61	4.25	21.34	5.40	2.88	.056
	Anarchic	23.06	5.03	25.08	4.68	23.86	5.40	5.35	.005**
Levels	Global	20.97	5.78	21.65	4.91	21.20	5.97	.45	.634
	Local	19.24	5.92	21.31	4.96	19.00	5.82	4.18	.016*
Scopes	Internal	21.51	5.91	23.31	5.08	21.25	5.74	3.29	.038*
	External	23.61	4.84	24.61	4.90	23.00	4.72	1.94	.143
Leanings	Liberal	25.36	5.39	27.07	4.74	25.35	5.20	3.54	.029*
	Conservative	16.95	6.89	20.02	7.24	16.57	6.31	6.91	.001**

Note. * $p < .05$, ** $p < .01$ (two way significance level).

across status, education, gender, affiliation, and age. Participants' status was determined to be influential over executive, hierarchic, anarchic, local, liberal, and conservative thinking styles. Inspectors were less executive than teachers and school principals. The reason why inspectors were more legislative and judicial, and why school principals were more executive can be explained by the variation in their responsibilities. The study also showed that inspectors' scores for the internal thinking style were higher than those of the other participants. We can conclude that inspectors preferred to work independently when dealing with a task. The study showed that teachers' scores for the hierarchic category were higher than those of inspectors. These findings indicate that teachers can deal with several prioritized assignment simultaneously. Teachers also had low scores for the anarchic category compared to that of principals. One can infer that principals preferred flexibility when they were achieving objectives. The study also showed that principals' scores for the local thinking style were higher than those of the other participants. We can also conclude that principals prefer to undertake tasks involving much detail. With regards to the liberal thinking style, teachers had significantly lower scores than those of school principals and inspectors. This finding indicated that teachers did not like to be engaged with a task that has considerable novelty and ambiguity. Furthermore, school principals were more conservative than teachers and

inspectors. We can infer that school principals preferred to follow rules and procedures when they govern a school. Again, the reason why school principals were more conservative can be explained by the differences in their responsibilities.

Participants' age has been determined to be related to the monarchic, oligarchic, liberal, local, and conservative styles. Earlier, Balgalmış and Baloğlu (2010) noted that oligarchic, local, and conservative thinking styles of school principals varied across different age groups. Participants aged between 41 and 50 had significantly higher scores compared to that of the 31-40 and 51-60 age groups with regards to the monarchic thinking style. This finding indicates that teachers, principals and inspectors between 41 and 50 years of age preferred to focus only on one goal. The study showed that local, liberal, conservative, and oligarchic thinking styles were preferred less by people under the age of 30 than those of over 30. Similarly, Sternberg and Grigorenko (1995) also demonstrated that older teachers were more executive, local, and conservative than were younger teachers. Therefore, one can state that teachers, school principals, and inspectors under 30 can view things from a broader perspective, do not enjoy dealing with details, do not prefer established rules and prefer working on one project at a time. This result is not surprising and reflects the character of younger participants.

Education has also been determined to be a more

influential factor than preferences for the local and conservative thinking styles. Participants with an associate degree have been shown to prefer the local thinking style more than the training institution or graduate degrees. Thus, one can infer that participants with an associate degree have a more pragmatic tendency and are drowned within details that waste a lot of their time. Also, a conservative thinking style has been found in significantly more participants with associate and training institution degrees. This finding is not surprising as we would expect participants with lower education levels to prefer local and conservative thinking styles. Jones (2006) did not find a significant difference in terms of academic degree earned. The difference between the two studies might be due to population difference. In other words, Jones' study investigated thinking style preferences of female college and university presidents where as our study explored thinking style of teachers, principals and inspectors. Thus, the aforementioned groups are very different in terms of their education level. This study indicated teachers', principals' and inspectors' thinking styles differed in terms of tenure. Our research regarding tenure is similar to that of Balgalmış and Baloğlu (2010). The result indicated that teachers, school principals and inspectors who had more work experience tended to prefer more oligarchic, conservative, external, and local thinking styles. This finding indicates that as teachers', principals', and inspectors' tenure increases, they tend to reduce their idealistic behaviors and expectations. Also, they work toward several objectives at the same time without prioritizing the tasks and prefer familiar tasks/activities that allow for interaction with others. Furthermore, they like specific and concrete details. This finding is not surprising in that as the person is aging he/she tends to drop his/her idealistic behaviour and prefers conformity. Also, participants who had 11 - 20 years work experience had lower scores for the executive thinking style than the other groups. This result suggests that novice and experienced teachers, principals and inspectors may be more likely to follow the guidelines set by their school authorities. This finding is also in harmony with our expectations; people with mid tenure levels are braver and prefer clear instructions.

Legislative, hierarchic, anarchic, global, local, internal, liberal, and conservative thinking styles have been shown to vary in terms of gender. Balgalmış and Baloğlu (2010), Zhang and Sternberg (2002), Balkıs and Işiker (2005) also found out that gender was a variable affecting choice over thinking styles. Women generally prefer legislative, hierarchic, anarchic, global, local, internal, and conservative thinking styles whereas men mostly select legislative and executive ones. Our findings regarding gender are compatible with those of Balgalmış and Baloğlu (2010), Zhang and Sternberg (2002), and Uygun and

Kunt (2014). According to Balgalmış and Baloğlu, men prefer legislative thinking style more than women. The reason for this discrepancy might be because their study was limited to school principals and our study included teachers, principals and inspectors. These findings suggest that women participants are individuals who are conscious about how and what to do, can handle many goals simultaneously, are sometimes not systematic, tackle problems randomly but can acquire a broader perspective when necessary, are detail oriented, are internal and less social, follow the rules and procedures, and do not like change. Men participants are individuals who like setting their own rules, are innovative, can make rational decisions, follow the already established rules and can develop new alternatives. However, these results did not agree with that of Can (2011), Grigorenko and Sternberg (1997), and Zhang (1999) in that there is not a significant difference with respect to gender in their studies.

Affiliation of participants was another variable investigated in the research. Participants working at public institutions have been shown to prefer anarchic, local, and conservative thinking styles whereas participants affiliated with a private educational institution have been shown to select legislative and judicial thinking styles. One can infer that public workers like procedures more, do not like authority and change, do not act systematically, are disorganized, and like working on details while private sector members know what and how to do, like setting their own rules, are braver in expressing their opinions, and like analyzing events and circumstances. The difference between public and private sector workers in terms of their thinking style can be explained by the culture of the workplace. In the private sector, legislative and judicial thinking styles might be encouraged. On the other hand, teachers and principals with anarchic, local, and conservative thinking style might be not well suited and dispensable in private schools because they can reduce overall performance and achievement of the school. Research findings regarding the affiliation variable are similar to that of Sternberg and Grigorenko (1995). They reported that teachers in urban public and Catholic parochial schools were significantly more conservative in their thinking style than were teachers in an elementary private school.

CONCLUSION AND IMPLICATIONS

This study investigated thinking styles of teachers, school principals and inspectors who work in primary education in terms of several demographic variables. Participants' status was found to be influential over executive, hierarchic, anarchic, local, liberal, and conservative

thinking styles. This finding indicates that the differences in thinking styles of teachers, school principals and inspectors may be explained partially by the nature of their responsibilities. Furthermore, participants' age, education, gender, tenure, and school type were influential contributors to thinking style.

This research introduces practical implications for both school principals and educational managers. Educational managers should investigate thinking style profiles for schools and inform schools on a regular basis for their thinking style profile. In other words, teachers, school principals and inspectors working at primary education institutions should be informed about their thinking styles. In addition to teachers, school principals and inspectors should also be educated about thinking styles and encouraged to form their methods of teaching and assessment according to their students' dominant thinking style. Consequently, the academic achievements of students can be increased by raising awareness of thinking styles of all the actors that play a critical role in education.

Limitations to this study and suggestions for future research are as follows. The sample of this study was not suitable for any other statistical technique other than one way variance analysis. It was not possible to determine if the thinking style of teachers, school principals, and inspectors working at primary education institutions differs across gender and educational background through two-way ANOVA. Increasing the number of women, school principals and inspectors in the sample will give the opportunity to do two way ANOVA or MANOVA analysis. This study is limited to the primary education level of the national education system of Turkey. Further studies can be conducted on different levels such as secondary and higher education.

The fact that women participants mainly prefer conservative thinking style is worth thinking about. Factors preventing women teachers from taking managerial positions at primary schools should thoroughly be investigated and managerial positions should be made more appealing. This research has indicated that education is one of those factors that could make managerial positions more attractive to women. Therefore, primary education personnel should be encouraged to pursue post-graduate degrees. This study has also indicated that age is an important factor that affects the way changes are accepted and applied; thus, managerial positions should be made available to young people. The results of this study are limited to the the provinces of Samsun and Tokat so the need for a larger sample may be a advisable for future studies.

In conclusion, the various findings of this research suggest that status, age, education, gender, tenure, and school type are significant variables with regards to the

thinking style profiles of teachers, principals and inspectors. The significant contribution of this study is that it compared thinking styles of teachers, school principals and inspectors for the first time. Given that this work is exploratory, it could be useful to carry out further research to explain the findings. This study can be regarded as a foundation for further studies in this nature.

Conflict of Interests

The authors have not declared any conflict of interests.

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Full Length Research Paper

A critical look at lifelong learning

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Education, which is a fundamental right of human being, has been transformed into a kind of lifelong prisoning by marketing step by step under the name of lifelong learning. Adult education as one of the most crucial parts of the educational system has also been affected by the global trend of an international actor, the European Union through its lifelong learning approach discoursed in EU official documents correspondingly to globalization and tried to be converted to adult learning instead. Therefore, globalization is a primary factor that formalizes this context with the support of creating marketing systems in which the capital plays its magnificent role to reconstruct social organization and so of capitalism in a global scale as integrated with its institutions by eliminating social state praxis. Then, it starts to regard education as profitable and appetitive sector to ensure the success of knowledge-based global economy of the 21st century. Hence, this study is aimed for a look to lifelong learning approach of EU with a critical eye by signifying how it is being shaped by global marketing policies in the name of emancipation of the individual.

Key words: Lifelong learning, adult education, globalization, knowledge society.

INTRODUCTION

Lifelong learning is defined as all learning activities undertaken throughout life, with the aim of improving knowledge, skills and competence within a personal, civic, social and/or employment-related perspective. Lifelong learning is, therefore, about acquiring and updating all kinds of abilities, interests, knowledge and qualifications from the pre-school years to the post-retirement. It promotes the development of knowledge and competences that will enable each citizen to adapt to the knowledge-based society and actively participate in all spheres of social and economic life, taking more control of his or her future (EC, 2010). According to the European Commission, the scale of current economic and social change, the rapid transition to a knowledge-based society and demographic pressures resulting from

an ageing population in Europe are all challenges, which demand a new approach to education and training within the framework of lifelong learning (Kaya, 2013).

However, in global economies, individuals feel obliged to be a part of lifelong learning in order to gain new qualifications and so increase their chances of finding jobs when their opportunities of employment are limited. No longer are a long-term employment and the demand of the capital shaped in this direction, but individuals perceive the current system as a guarantee of employment. Within this context, in addition to the devalued owned, the tendency for the various professional documents and certificates are gone up, the acquisition of education via individual learning through training courses and other programs that are now out of school

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school or job come to the fore. As repeatedly emphasized, the certificates and documents are obtained in a fast gain speed and flexibility of the labor market, then the capital marketing programs, which are expected to meet the demand for qualified personnel, creates a new area for its own profit.

On the other hand, the case is not limited to the capital and the organization of courses is encouraged for the sake of improving the professional qualifications by the care of public educational institutions that are now established in the process of market. This also causes to the emergence of a significant inequality since it is in fact only free for the ones who can afford while being shown as if there is a kind of equality with the discourse of "learning is certificate and free for everybody". The target of education is no longer producing a common culture but now described as learning the basic and general skills necessary for the adaptation of individuals to the changing technology quickly and having a place in the labour market. The most important phase of achieving this is to make the system competitive and to subject the context together with the standardization of the produced knowledge for the central control, then to plan flexible training of the labor force demanded through global educational policies in a prompt way.

GLOBALIZATION AND LIFELONG LEARNING

Due to the advanced technology, globalization is frequently mentioned by gradually accelerated through communication more and more widespread in accordance with the objective of finding a new market of the capital. Although the growing economic crisis in the first half of the 1970s was tried to be overcome through the reconstruction of capitalism on a global scale, the term was started to be called with the processes of capital accumulation. In the 1970s, during the economic crisis period and the gradual decrease of revenue and profit rates as well as increase in unemployment rates, the capital which finds the remedy in reconstruction of social organization and so of capitalism in a global scale as integrated with its institutions and processes began to accomplish its actions devoted to eliminate social state praxis under the mask of globalization step by step. As pointed out by Macrow (2009), globalization takes on a dominant role in promoting economics, finance and market principles and shapes the national social and cultural policy-making processes in the restructuring praxis of education.

The primary target of the capital is to double its profit rates in any case, and no step is taken to provide full employment with the fear of losing their profit and competitive opportunities. Besides, after 1974 to 1977, the so-called period of stagnation, there was a change in the historical context of capitalism such as "the trend of capital accumulation towards financial markets", "total

growth retardation" and the "multi-national companies spread throughout the world" (Sweezy, 1997). Within this direction, capital groups from different countries came together in a global scale and started to form sectoral marriages on behalf of setting multi-national companies in a kind immensity, then continued to grow up by also taking the cultural and educational processes into its scope. By that way, the national education systems begun to leave their places for "lifelong learning" approach which became dominant in global education policies.

On the one hand, while the global capitalism promotes for the self-investment of human capital, it also causes unemployment or working in poor conditions even for people who invest on their own learning with hope of finding a good job. On the other hand, it stands on the sidelines for the increase of the qualified but cheap and flexible labour force through the marketization of education (Tight, 1998). Since the advanced technology and growing capitalist structuration bring about by the changing skills, the differentiations required in the context of both social and labour life occur and then the professional and vocational qualifications obtained before becomes insufficient and new demanded qualities steadily expand. Then, educational policies of the aging continent EU implement programs in the series to train individuals who are forced to change, to be educated and equipped with new skills.

From this point of view, on behalf of global funds to meet market demand, the new terms such as "flexibility" and "harmony" come up with learning and learning society concepts in education and it is aimed that individuals should be trained within that context and be converted to the potential workforce which will serve for the targeted stakeholders. It is crucial that the labour force trained be as flexible as the education is and then adopted with the market conditions if education is compatible with the demands of the market economy and flexible to meet them. The fundamental basis of such an expectation is created on the fear of being unemployed if the person fails to renew his/her skills continuously and adapt himself/herself to the flexible working conditions.

Because of this concern, individuals will wade into learning with the idea of having advantageous in competitive environment and then take their places in the category of life-long learners as being obliged to buy the information but not the knowledge. As paid attention by the critical literature, in an environment where the market economy regards human as a capital, the global actors who have the aim of being shaped by the needs of the market and shaping it as well invest in this learning industry and mandate to have flexible skills with the emphasis on lifelong learning of the employees, but cannot give any job guarantee in full. As stated by Orivel (2002), the lifelong learning approach which in fact rivets inequalities and exclusion rather than eliminating them comes up with the result of its reductive logic on

restriction of learning just as vocational learning and struggle for reducing unemployment in Europe.

Moreover, in a world where global forces decide the limits through the sections such as reduction of public expenditure, taking labor costs down, converting labour more flexible and harmonized, it is inevitable that the capital, which is in shortage of capital gain profit, regards education as profitable and appetitive sector. At this point, "lifelong learning" is come up as the savior and education are transferred into a profitable investment as so-called equality of opportunity but in essence as means of annuity. While all these happen, individuals exposed to drastic changes in their lives are deceived with the utopia of forming a happier world for them and the trick of providing the best for everybody in civilized conditions is tried to be imposed.

However, the most important thing is to look behind the dynamics of lifelong learning declaration of the new world order advocated by neoliberalism since this will provide a better understanding of the process and so the effect of globalization on educational policies. One of the most significant dynamics among these is the particular emphasis stressed on individual's having responsibility for his/her own actions and his/her so-called freedom, but by this way, the right to education and all of its cost are placed on his/her shoulders again. Whereas, lifelong learning idea trains more entrepreneurial and competitive individuals, the social state principal and its praxis are drifted away step by step with the reduced public spending in the camp of privatization and the learning individual is tried to settle down inside the state and market relations through economic, political, and cultural context of privatized social system. Moreover, while the state is desired to be converted to a passive regulatory agency, that individual is treated as customer within such a marketing relation then sandwiched between the private sector and civil society via a global movement and faces with the marketization of everything including his/her own (Bagnall, 2005).

In addition, lifelong learning is structured in a way that information forms the economy in this information age, with the aims of making people get information in a shortest and fastest way and underlines the success for them who reach the information and forges ahead of the competitors. Griffin (1999), stresses that lifelong learning is instrumented in not only international but also national processes and utilized more as the central element of the neoliberal reform policy and treated as both consumption and investment in today's capitalist societies. According to Torres (2001), the above manner comes to a stand on a global scale based on the four trends related to the field of education: "Education for All", "Adult Education", "Literacy" and "Lifelong Learning "; but the fourth trend, "Lifelong Learning " is brought for more and promoted as an umbrella approach within the context of European Union educational policies by ignoring the other three approaches and the strong link between globalization

and lifelong learning reveals itself clearly.

ADULT EDUCATION IN LIFELONG LEARNING

The pioneers of the critical approach like Illich, Freire, Foucault, Field, Jarvis, Apple, Giroux, Crowther, Mayo, Edwards and Usher, points out that the capitalist system constitutes an obstacle for the society and for the emancipation of the individual controlled and dictated by the globalized and localized educational institutions and policies. Thus, lifelong learning is a new form of social control system and is a praxis preferred to ruin the society. For instance, Giroux (2002) emphasizes that the role of education as a controlling mechanism in capitalist society and the access for education of an individual is directly related to his/her socio-economic level, and this level determines his/her future learning. Besides, it is put forward that everyone has the right to benefit from equality of opportunity in education but the possibility for benefiting of the poor or people with low-income from the same educational opportunities is relatively lower than the people with high-income.

Because of this reason, the idea of individuals' taking the advantage of educational opportunities on an equal basis seems impossible in terms of socio-economic conditions and the owned of education and learning opportunities underscore the stratification more in the community (Illich, 1995). As also stated by Field (1999:11), for no one who wants to learn is ready to learn, he/she is exposed to learning as must, then, this situation reveals that individuals are sentenced to be the prisoners of lifelong learning. After all, lifelong learning as an objective of the policy, which desires to guarantee the compatibility in between flexible capitalism and new brave world, not only tries to influence people and hides the narrowing of democratic public space, but also reduces welfare and loads the learning responsibility on individuals' shoulders.

According to Crowther (2004), current representative of critical approach, in a global platform where everything goes right to privatization, education is increasingly commercialized, being a learning individual, as now far from being a true citizen, means being a beloved consumer of goods and services by the impose of global actors day by day. Apple (2007) also underlines that similar highlights taking part in the formation of lifelong learning have increased the interest of the neoliberal circles for the approach and staked their claim. Then, developing new skills and just learning only for the sake of being flexible and adjustable in the market are nominated as the sole purpose of individuals, and then the war of getting a proper position in labour force and society is started.

On the other hand, Mayo (2009) underlines that the idea of the individuals' having an active control mechanism on their own presence and life choices

through so-called investing on their own personal development which is imposed by globalization on education is not possible since the society is wished to be controlled by the market and the capital in real. This process instrumentalizes lifelong learning by using international discourse as an official and political tool of both creating a public policy and convincing citizens about the benefits of learning by the political authorities. Similarly, Foucault (2006) who also draws attention to social justice issues state that there is dictation of economic and political power available in "adult education" and these suppress the social justice and community objectives. However, in an environment of increased rhetoric of individualism, consumerism and market competitiveness, it is evident that the belief that the individuals should take the responsibility of improving their employability is encouraged. Again, it is not wrong to indicate that these policies trigger an "adult learning" approach, which serves for the market place providing financial flexibility in order to create a global and daily workforce. Within this framework, adult education is transformed into a piece of symbolic expressions of modern democracy. Apparently, as Jarvis (2006) states, individual lifelong learning has become more of a reality and now, those individuals are in a race of learning for a global market in their later life. On this basis, adults are the part of a main-stream education and day by day this form of education has been taking on a more vocational learning perspective and human capital development.

In this regard, Freire (2000) draws attention that the critical and emancipatory forms of education, especially adult education, are marginalized and that the area in question is increasingly colonized within the neoliberal economic and pragmatic political logic. For this reason, the need to be the subject of our lives is crucial and requires critical reading of the words the world around which characterizes social participation and could contribute to the development of democracy. Actually, the revitalizing and strengthening of the subject are strongly needed in a world where public areas are restricted since these areas are permanently reduced by commodification and a fake perception of freedom structured on an understanding that tolerates the format of being an individual consumer to be realized while digressing to allocate time for social interaction among people.

Furthermore, Edwards and Usher (2001) mentions that adult education is converted into a form of an investment in human capital who will ensure the success of knowledge-based global economy of the 21st century and surrounded with an economic myths that links in between individual learning, organizational productivity and global economic performance. Moreover, Jones (2005) expresses that adult education in lifelong learning as the inevitable part of job market and new business types in EU Lisbon strategy document is highlighted in a form of tools for creating the world's most competitive and dynamic knowledge-based economy. Hence, knowing the

real concern to say closely related to the preferred word concealed in minds is very important in accordance with the opinion of Foucault who defends that there is a definite message underlying at the bottom of every word used for the discourse set forth in EU's documents related with "lifelong learning" and "adult education".

Mainly, based on the point of view forcing readers to be influenced by the metaphors and rhetorics in texts, the language used should be considered while analysing the relevant documents and the propositions in which each concept reflects a perspective should not be overlooked (Taylor, 2004). Then, adult education today constitutes the indicator of accessing to lifelong learning services (e.g. certification) in unique marketing system taking place as individual's responsibility (Grummel, 2007:191). Therefore, in order not to stay out of the economic order, individuals are forced to compete in the name of proving their learning qualifications more than ever. Within this framework, the temptation of lifelong learning comes from its flexible structure formed as both inside and outside of the formal education system, but thinking of its aiming, a kind of change for individuals and collectives creates an illusion entirely. As a matter of course, under such conditions, adult education that is one of the most crucial services of the welfare state for its citizens in order to reduce inequalities is hampered and how realization of lifelong learning which is taken to the agenda with the discourse of bringing equality of opportunity for everybody will be possible is still discussed in a platform that cost-free adult education cannot be achieved (Miser, 2002).

CONCLUSION

Today, a critical point which runs parallel with the gradual withdrawal of the state from the public domain and seemingly puts the person into the misconception of liberation, but in fact causes being oppressed under the weight of more responsibility loaded on, is reached. In this respect, while lifelong learning tries to raise more entrepreneurial and more competitive individuals, the welfare state is drawn away with the decline of public spending in the grip of privatization gradually and the person in a privatized economic, political and cultural context of social system is forced to get a place in connection with the state and the market. It is clearly visible in an environment of state's being increasingly removed from public service that lifelong learning takes its share of this situation and is also transformed into a global movement stuck between the private sector and civil society and reduced binding to professional.

Thus, when we look at the standard of lifelong learners, it is explicitly seen that for whom lifelong learning approach of global actors is serviced and how it follows a global path across the national boundaries instead of eliminating inequalities. Consequently, unless educational

system is recognized as a fundamental human right and policies in this regard are made, a real lifelong learning concept to be mentioned, which is not designed by the desire and the demand of the capital seems impossible, so just accepting what is coming through lifelong learning will continue to create inequity and injustice among people especially disadvantaged ones.

Conflict of Interests

The author has not declared any conflict of interest.

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Full Length Research Paper

Organizational justice as a predictor of organizational silence

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In this study, relation between teachers' perception for organizational justice and their organizational silence was examined. Sample of this study consists of 300 teachers who work at elementary schools in Siirt. Relational Scanning model was utilized in performance of this study. In this study, Organizational Justice Scale and Organizational Silence Scales were benefited from. For confirmative factor analyses and structural equity model of these scales, Statistical Package for the Social Sciences (SPSS) and Analysis of Moment Structures (AMOS) package softwares were utilized. Results of the research showed that teachers' distributive, procedural and interactional justice perceptions have negative relation with acquiescent silence and defensive silence, while having positive relation with prosocial silence. Regression analyse results confirms the thought that organizational justice is a significant variable that predicts teachers' organizational silence. Results of developed structural equity model showed that organizational justice has a negative and significant impact on organizational silence.

Key words: Organizational justice, organizational silence, teacher, structural equity model.

INTRODUCTION

One of subjects that should be valued is employees' perception towards organizational justice. Organizational justice perception is one of important indicators of workers' behaviors. The reason for this is the fact that employees with strong organizational justice perception tend to display positive behaviors, while negative ones could tend to exhibit negative behaviours such as decreasing their level of effort and changing their level of trust in the organization. In this context, organizational justice has been studied frequently in recent years as an important study field to fulfill the organizations functions (Greenberg, 1990). Organizational justice is important

due to its relation with important organizational variables such as organizational commitment, citizenship rights, job satisfaction and work performance. In recent studies, it was emphasized that there are significant relations between leadership styles and decision making and organizational justice (Pillai and Williams, 1996). A manager's just behaviours against his/her subordinates make them become committed to the organization at a high level and show better organizational citizenship behaviours. On the other hand, employees that are exposed to unjust behaviours quit the organization at a high rate or show lesser commitment to the organization

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and even show rude behaviours against their organizations.

In studies concerning the justice, it is emphasized that justice process has important role in an organization and has the ability to affect belief, behavior, manner and emotions of the employees (Bos, 2001). In other studies related to the subject, it is emphasized that if employees receive fair behaviours from their managers and organizations, their social interaction will be stimulated more beyond their expectation of role and their commitment to their organization will increase. Additionally, when employees are exposed to unjust behaviours of their organization, they start to feel to be unimportant for their organization and choose not to trust their organization and whenever a problem occurs in the organization, they choose to stay silent (Dabbagh et al., 2012).

Silence of employees has an important role in success and failure in organization. Silence causes to a negative organizational atmosphere in occurring of new ideas, exhibition of talents and information share, and this means a significant danger for organizational. Thus, it is quite important in creation of innovation in an organization if the employees stay silent or not in making decisions about opportunities (Morrison and Milliken, 2000). The reason for this is the fact that organizational silence has a strong impact on organizations and managements and this silence can overwhelm the organizations and businesses. Almost every employee has thoughts, suggestions, concerns or worries about organizations. However employees either usually refrain from stating these or they have learned to keep silent in time (Piderit and Ashford, 2003)

Despite silence is thought to be golden in individual life, it is different for organizations. Silence in worklife can harm both employees and organizations. Generally, organizational silence causes stress, cynicism, dissatisfaction and lack of communication between friends (Vakola and Bouradas, 2005). According to Morrison and Milliken (2000) organizational silence may cause insignificance feeling, lack of control perception and cognitive inconsistency (Vakola and Bouradas, 2005).

Also, Oliver (1990) states that organizational silence may cause labour turnover, lack of motivations and a tendency towards low endeavor for reaching organizational aims (Vakola and Bouradas, 2005). In organizations, decrease on an employee's trust in the organization and organizational commitment can be observed due to not expressing problems and employee's being affected negatively from these problems. As a result of this, work success of the employees can decrease. Leading problems caused by organizational silence are employees' inability to produce new solutions and not being open for improvement (Özdemir and Uğur, 2013).

THEORETICAL FRAMEWORK

Organizational justice

The term organizational justice roots back to studies of authors such as Homans (1961), Adams (1965), Deutsch (1975), Sampson (1975), Leventhal (1976), Thibaut and Walker (1978), (Greenberg, 1987, 1990; Şahin, (2007). Although, the term organizational justice first used for adaptation of progresses in justice systems (Greenberg and Tyler, 1987), it is accepted that the term's use in general organization literature, its conceptualization and popularisation started with Greenberg's (1987) studies. Organizational justice is regarded as a term that has a structure that can result in important cases for employees and organizations in the work environment (Colquitt et al., 2005; Gilliland and Chan, 2009). While practice of the justice efficiently in the organizational environment can give birth to positive results, negative results will be inevitable in case of non-performance. Organizational justice is a fact that has the potential to create lots of advantages for employees and organizations. It is stated that these advantages can be increasing trust, commitment, work performance, helpful behaviors, and customer satisfaction and decreasing disputes. On the other hand, absence of organizational justice and troubles in performance of which will cause problematic situations for organizations (Cropanzano and Wright, 2003).

Justice in organizations is rules and social norms about how to manage and distribute the rewards and punishment (Aydin and Karaman-Kepenekçi, 2008). These rules and social norms show how to distribute rewards and punishments, how some distribution decisions are made and are related with interorganizational and interpersonal applications (Folger and Cropanzano, 1998). When we give some examples for descriptions in related literature, Greenberg (1996) describes organizational justice as a term that explains the perception of employees about how fair they are treated and how this perception affects results such as organizational commitment and satisfaction. Al-Zubi (2010), described organizational justice as "a term that has a direct relation with work environment and that identifies the role of justice in work environment", while Cropanzano and Greenberg (1997) states that organizational justice is the justice that the individuals perceive in their organizations. Additionally, subjects such as justice in employees' commitment in organizational policies, payment systems, priority in going to vacations are related to organizational justice. As the studies that employ organizational justice as their research subject are examined, it is seen that the organizational justice is usually examined in three important dimensions namely distributive justice, procedural justice and interactional justice (Gilliland and Chan, 2009; Lee, 2000; Lemons and Jones, 2001; Lowe and Vodanovic, 1995; McFarlin and Sweeney, 1992;

Rifai, 2005).

Distributive justice is predicated on justice during distribution of outputs obtained from production. It is employees' production sharing in line with their contribution to the production progress. With other works, it is about justice perceptions of employee's about the expected amount of gains in return of the value they contributed during their service in organizational by utilizing their knowledge and experience. Organizational justice is based on Adams's equity theory. Accordingly, an employee controls if there is an inequality between the gain of themselves and other employees by comparing their contribution and gains to other employees' contributions and the gains. Distributive justice doesn't only base upon fair distribution of the outputs obtained from production, but also on objectivity among the employees during distribution of intra-organizational other payments (rewards, bonuses, premiums etc.) (Beugre, 2002; Folger and Konovsky, 1989; Tinaz, 2009).

Procedural justice is providing the consistency in the ways and methods to be followed in determination of individuals that are efficient in decision making, determination of objective rules for reward system, structure of decision making progress and clear description of its content and distribution of sources and rewards (Chan, 2000). Additionally, procedural justice also means the individual evaluation of fairness of gain distribution ways. Procedural justice is seen as justice term that is about how the subjects such as distribution of salary increases, solution of employee disputes, performance evaluation are performed (Cropanzano and Stein, 2009; Folger and Greenberg, 1985). In this regard, as the employees have the trust feeling that their gains in long term will be fair, at the same time they feel their value in organization by realizing their position in organizational (Paterson et al., 2002).

Interactional justice reflects the justice that the individual perceives in interpersonal behavior and interactional justice during the performance of a procedure in an organization. In other words, it is described as the features of behaviors and manners that employees and managers face while the managers fulfill procedures related to organizational activities (procedural and distributive) (Liao and Tai, 2006). Although, the interactional justice seems as a subtitle of the procedural justice term, both differ from each other. Interactional justice mostly concerns about interpersonal relations and justice during procedures. These two justice terms are affected by variables (Bies, 2001; Khan et al., 2010; Byrne and Cropanzano, 2001). Most of the time, employees track the decisions that are made in their organization and managements manners towards them closely. Thus, if the decision makers show sensitivity, treat respectfully and make logical expressions about the decision made to their employees, the employees' perception for interactional justice will increase (Colquitt, 2001), and this

situation will cause more cooperative and positive manners and behaviours among employees (Anderson and Shinew, 2003).

Organizational silence

Despite the fact that the organizations are aware that they have to work in harmony with their employees for achieving success in competitive environments, they trigger their employees' silence intentionally or unintentionally. Even though silence of the employees was perceived as conformance or obedience, today it's accepted as a reaction or pullback (Bildik, 2009). Silence is described as absence of sound, quiet (TDK, 2005), absence of speech or non-exhibition of a behavior that could be understood clearly (Dyne et al., 2003). Morrison and Milliken (2000), describe the silence as "Intentional spare of an employee's knowledge or thoughts about improving their works or organization". In another description, the silence is described as omission of vocal or written expression of cognitive or emotional evaluation that can change or improve organizational conditions (Pinder and Harlos, 2001).

Morrison and Milliken's (2000), studies are included to organizational silence term management literature that is based on silence term. Employees' sparing their ideas and thoughts about organizational problems and organizational improvements and collective occurrence of this situation lies behind the term organizational silence. This situation is known as a really important obstacle before organizational change and improvement (Morrison and Milliken, 2000). This state of behavior, where the employees cannot express their thought, idea, worries and suggestions about the works they're responsible for or organization's other works is experienced in organizations frequently (Milliken and Morrison, 2003; Morrison and Milliken, 2000; Vakola and Bouradas, 2005). Morrison and Milliken (2000), study the organizational silence specifically as "a result of manager's manners and beliefs". In another description, organizational silence is a collective matter of fact where an organization can talk or act less towards producing a solution for the problems they faced (Dayton and Henriksen, 2006). Studies, (Çakıcı, 2008; Kahveci and Demirtaş, 2013; Milliken et al., 2003; Pinder and Harlos, 2001; Özgün and Külekçi, 2012; Premeaux, 2001) indicate that organizational silence may have some kind of reasons rooting from individual or organization, and the silence may occur in various forms. These are acquiescent silence, defensive silence and protective purpose (prosocial) silence.

Acquiescent silence is a state of passiveness where employees do not share their knowledge, idea and thought due to neglect or submission in workplace (Kahn, 1990; Pinder and Harlos, 2001). Centralization effort that prevails in traditional organization causes the employees

feel weaker, show lesser organizational citizenship behaviours, feel unsuccessful and show a submissive and unconcerned personality that is afraid of organizational hierarchy (Raub, 2008). Along with this, traditional organization managers usually don't have tolerance for adversaries. Employees are forced to stay silent in environments where fear and suppression exist. Employees as an important shareholder group know that most of the time their ideas will not be in communication with upper management. Especially in governmental organizations, ideas are always limited to ideas of upper management (Calpham and Cooper, 2005).

Silence for self-protection (defensive) is a behavior of sparing employees' ideas, thoughts and knowledge to themselves for self-protection. It's a product of a trend of self-protection from outer threats as an intensive and proactive behavior. It is developed depending on self-defence instinct and the fear of being kept responsible for existing or possible problems. Employees tend to hide the reality about mistakes and problems that are made depending on this fear (Dyne et al., 2003). This behavior that is made for self-protection includes ignoring the problems, hiding personal mistakes and hiding new ideas (Çakıcı, 2010).

Silence based on Protective/ProSocial tendency, along with two basic behavior dimension that were mentioned above, there is another silence behavior that is based upon prosocial tendency (for the sake of the organizations/others focused). This kind of silencer doesn't occur due to any forcing or instruction of organization. Employees show tendency for cooperation and don't share private information belonging to organization with inappropriate people, protect the confidentiality and spare them for the benefit of them. They don't make any negative comments about the organization outside. They praise the organization and employees. It is a requirement of prosocial behavior to tolerate problems and continue working without complaining in any environment (Dyne et al., 2003). As a result, being silence has negative reflection upon organization and employees. Organizational results of silence occurs in forms of non-utilization of employees' of intellectual contribution, suppressing of problems, omission of negative feedbacks, filtering the information and staying idle against problems. Behaviors like these can prevent healthy decision making, progressing/improving and increase in performance (Morrison and Milliken, 200; Premeaux, 2001). Negative impacts of the silence on employees are the fact that the employees feel weak in expressing the problems and worries about workplace, decrease in commitment to the organization, belongingness, and trust, admiration and support feelings. Besides, being silent in subject an employee knows and is good at, makes them suffer and lead them to feel helpless and insignificant (Detert and Edmondson 2005; Milliken and Morrison 2003).

Determining the relation between teachers' perception for organizational justice and organizational silence is important in terms of learning which dimensions of organizational silence is in relation with which dimensions of organizational justice. It can be said that a teacher with a high perception of organizational justice will show a higher effort for the success of the school he/she works for, and will comply with purpose and values of the school. From the aspect of increasing teachers' perception for justice, it is necessary to make an inference about relation of these variables with organizational silence and features of a silence prevailing in a school where teachers' trust feeling is high. This study can provide some findings oriented at managers, school principals and especially teachers who are on a decision making position about education. For efficiency of the school, when it is regarded that in spite of teachers' being silent in decision making process or in solution of encountered problems, the organization and managers should treat them fairly. Thus, the results of the study are expected to contribute to the literature significantly. In this context, main purpose of the study is to examine the impact level of elementary school teachers' organizational justice level on their organizational silence. In line with this basic purpose, answers for following questions were sought:

1. How are the elementary school teachers' perceptions for organizational justice?
2. How are the elementary school teachers' perceptions for organizational silence level?
3. Are there any relations between elementary school teachers' perception for organizational justice and organizational silence level?
4. Do elementary school teachers' perceptions for organizational justice predict their organizational silence significantly?
5. Do elementary school teachers' perceptions for organizational justice affect their organizational silence negatively and significantly?
6. Do elementary school teachers' perceptions for organizational justice explain their organizational silence significantly?

METHODOLOGY

Research model

This research was performed by means of relational screening model. This is a model that aims to determine the existence and grade between two or between more than two variables (Karasar, 2012). In terms of this, relations between elementary school teachers' perception for organizational justice and organizational silence level were examined. Dependent variables of the study consisted of teachers' acquiescent, defensive or prosocial silence. Independent variables consisted of organizational justice's distributive, procedural and interactional dimensions. It is thought that there will be a negative relation between organizational justice in a school where distributive, procedural and interactional justice is

perceived in a high amount and the teachers' level of acquiescent, defensive and prosocial silence levels. In this context, relations between variables and predictive power of independent variables were examined.

Sample

Sample of this study consists of 300 class teachers that work at randomly selected elementary schools in Siirt. For structural equality model, data must meet the multiple normality assumption. In order to meet this assumption, minimum sample size must be between 100 and 150 (Hair et al., 1998). Since contributor number of the research is 300, this number is suitable for the purpose and statistical analysis of the research. Demographical features of the attendees are as follows: %41,7 of the attendees are (f=125) "female", %58,3 is (f=175) "male". %66,7 of the attendees are (f=200) in "30 and younger" age groups, %27,7 is (f=83) "31-40 age" group and %5,7 are (f=17) "41 and older" age group. In terms of work duration %81,7 of the attendees have (f=245) "10 or less years", %16,0 have (f=48) "11-20 years" and %2,3 have (f=7) "21 and more years".

Analysing of data

Data obtained from research were first entered to SPSS package software and a value was calculated for that factor by assessing arithmetical values of items that exists on each sub-scale. Analyses were made over these factor points. Pearson Moment Correlation Coefficient (r) was utilized for calculation of relation between variables.

In addition to that, for assessing independent variables' prediction power for dependent variables, a Multiple Linear Regression Analysis was made. In interpretation of regression analyses, standardized Beta (β) coefficients and t-test results related to significance of these were regarded. In analysis of data, .05 significance level was regarded. In the second step, for confirmatory factor analysis and designed model AMOS was utilized. In estimating of model parameters in confirmatory factor analysis RMSEA (The Root Mean Square Error of Approximation); SRMR (Standardized Root Mean Square), GFI(Goodness of Fit Index), CFI (Comparative Fit Index), AGFI (Adjusted Goodness of Fit Index), NFI (Normed Fit Index), $\chi^2/sd = CMIN/DF$ (chi square/degree of freedom), and significance level (p) fit indexes were regarded. RMSEA value was 0-0,08; SRMR value was 0-0,10; GFI value was .90-1,00; CFI value was .90-1,00; AGFI value was .85-1,00; NFI value was .90-1,00; χ^2/sd (CMIN/DF) value was 0-3; p value was 0,01-0,05, these shows good fit indexes. (Bayram, 2010; Byrne, 2001; Kline, 2005; Şimşek, 2007). In this research, lower limit for factor load of items in confirmatory factor analysis is taken as .30.

If there are less items in a scale that is prepared in social sciences field, factor load value lower limit can be decreased to .30 (Büyükoztürk, 2012). Additionally, in assessment of normality for confirmatory factor analysis and structural equality model, critical ration was grounded on fewer than 10. According to Kline (2005) critical ratio is in some sort the normalized estimation of multivariable kurtosis that is, "z" value. Critical ratio's being higher than 10 shows that there is a problem in kurtosis value of the distribution.

Data collection tools and confirmatory factor analysis

Organizational Justice Scale

It was developed by Niehoff and Moorman (1993) for measuring

organizational justice. The scale that was adapted by Polat (2007) to Turkish language consists of 19 items which has the features to assess the level of distributive (6 items), procedural (9 items) and interactional (4 items) justice. Scale's Cronbach Alpha coefficient whose validity and reliability studies were performed was .96. The coefficient was .89 for distributive justice, .95 for procedural justice and .90 for interactional justice. Organizational Justice Scale is a Likert type scale graded from 1 to 5. Accordingly, I strongly disagree: 1 point; I disagree: 2 points; I am neutral: 3 points; I agree: 4 points; I strongly agree: 5 points. As a result of the analysis performed on data obtained from this study, Cronbach Alpha coefficient for the whole of the scale was found to be .97. Reliability coefficients for the sub-dimensions of the scale were .92 for distributive justice, .96 for procedural justice and .90 for interactional justice (Table 1). Additionally confirmatory factor analysis diagram of the scale is shown on Figure 1. As a result of confirmatory factor analysis, as the assessment of the normalcy is regarded, critical rate from the aspect of multivariate (Martdia) values was 49.190. Since there was no items whose critical rate is bigger than 10, all the items were included for the next step. In this case, as a result of the analysis that was performed by regarding MI (Modification Indices) in confirmatory factor analysis of "Organizational Justice Scale" that consists of 19 items, the fit values were found to be RMSEA=.070; SRMR=.034; χ^2/sd (CMIN/DF)=2.57; GFI=.880; CFI=.960; AGFI=.914 and NFI=.930. This result shows that fit values of the model are acceptable and at desired level.

Organizational silence scale

It was developed by Dyne et al. (2003) for measuring organizational silence. The scale that was adapted to Turkish by Eroğlu et al. (2011) consists of 15 items which has the features to assess the level of acquiescent (5 items), defensive (5 items) and prosocial (5 items) silence. Scale's Cronbach Alpha coefficient whose validity and reliability studies were performed was .783. The coefficient was .853 for acquiescent silence, .897 for defensive silence and .823 for prosocial silence. Organizational Silence Scale is a Likert type scale graded from 1 to 5. Accordingly, I strongly disagree: 1 point; I disagree: 2 points; I am neutral: 3 points; I agree: 4 points; I strongly agree: 5 points. As a result of the analysis performed on data obtained from this study, Cronbach Alpha coefficient for the whole of the scale was found to be .86. Reliability coefficients for the sub-dimensions of the scale were .89 for acquiescent silence, .92 for defensive silence and .88 for prosocial silence (Table 1). Additionally confirmatory factor analysis diagram of the scale is shown on Figure 2.

As a result of confirmatory factor analysis, as the assessment of the normalcy is regarded, critical rate from the aspect of multivariate (Martdia) values was 45.320. Since there was no items whose critical rate is bigger than 10, all the items were included for the next step.

In this case, as a result of the analysis that was performed by regarding MI (Modification Indices) in confirmatory factor analysis of "Organizational Silence Scale" that consists of 15 items, the fit values were found to be RMSEA=.070; SRMR=.059; χ^2/sd (CMIN/DF)=2.46; GFI=.910; CFI=.960; AGFI=.911 and NFI=.940. This result shows that fit values of the model are acceptable and at desired level.

FINDINGS

Correlation analysis

Arithmetical mean and standard deviation values related

Table 1. Descriptive statistics and correlation matrix of constructs

Constructs	\bar{X}	S	1	2	3	4	5	6
1. Distributive justice	3.96	.82	(0.92)					
2. Procedural justice	3.78	.89	0.78**	(0.96)				
3. Interactional justice	4.11	.78	0.77**	0.79**	(0.90)			
4. Acquiescent silence	2.14	.88	-0.23**	-0.26**	-0.27**	(0.89)		
5. Defensive silence	1.79	.80	-0.23**	-0.22**	-0.27**	0.71**	(0.92)	
6. ProSocial silence	3.58	1.07	0.13*	0.10	0.15*	0.01	0.07	(0.88)

Note 1: *p-value <0.05, **p-value <0.01, N = 405.

Note 2: Numbers in parentheses indicate the Cronbach's α of constructs.

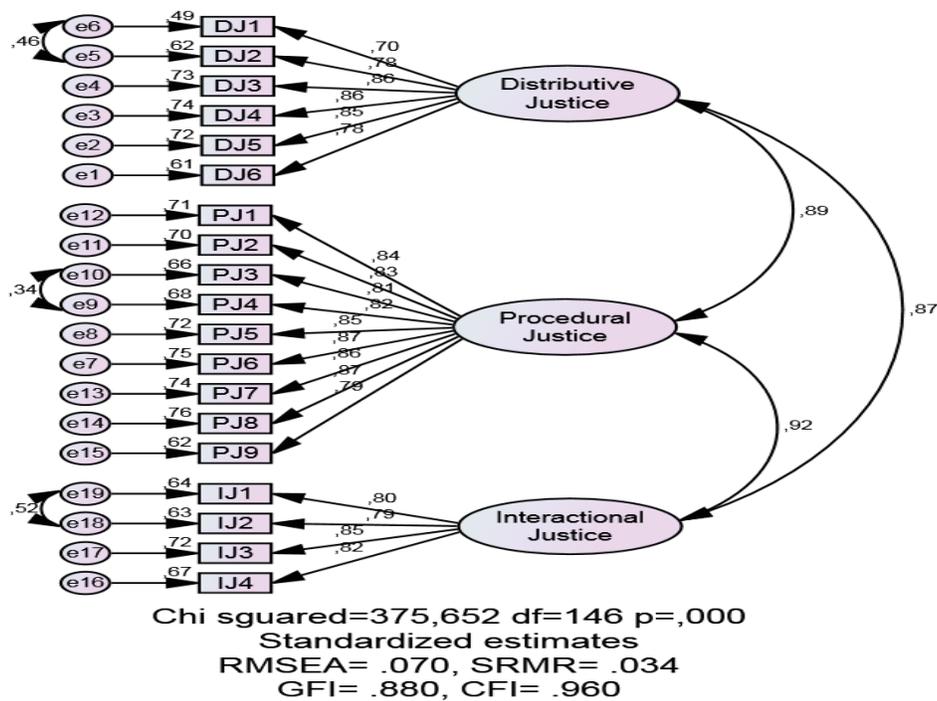


Figure 1. Confirmatory Factor Analysis Diagram of the Organizational Justice Scale.

to dependent and independent variables of this study and correlation coefficients between these variables are given in Table 1. According to data in Table 1, participant teachers' perception levels in terms of interactional justice (\bar{X} =4.11) was higher comparing to distributive justice (\bar{X} =3.96) and procedural justice (\bar{X} = 3.78). Highest grade mean in terms of organizational silence dimensions was in defensive silence dimension (\bar{X} =3.58), as lowest grade mean was in prosocial silence dimension (\bar{X} =1.78). As the correlation coefficient between variables are examined, it is seen that there is a positive and significant relation between distributive justice and procedural justice ($r = 0.78, p < .01$) and interactional justice ($r = 0.77, p < .01$). There is also a positive and significant relation between procedural justice and interactional justice ($r =$

0.79, $p < .01$). Additionally, while a negative and significant relation was found between distributive justice and acquiescent silence ($r = -0.23, p < .01$) and defensive silence ($r = -0.23, p < .01$), as a positive and significant relation with prosocial silence ($r = 0.13, p < .05$) was found. Similarly, a negative and significant relation was found between interactional justice and acquiescent silence ($r = -0.27, p < .01$) and defensive silence ($r = -0.27, p < .01$), as a positive and significant relation with prosocial silence ($r = 0.15, p < .05$) was found. However, as there was a negative and significant relation between procedural justice and acquiescent silence ($r = -0.26, p < .01$) and defensive silence ($r = -0.26, p < .01$), their relation with prosocial silence was insignificant ($r = 0.10, p > .05$). Besides, as the relation between acquiescent silence and

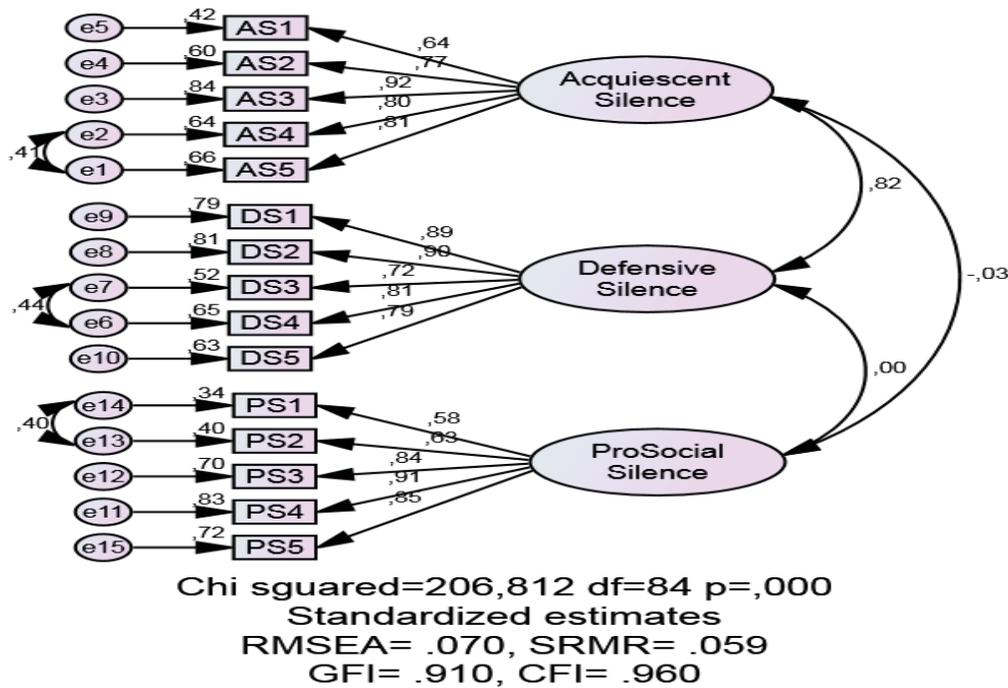


Figure 2. Confirmatory Factor Analysis Diagram of the Organizational Learning Scale.

Table 2. Regression analysis results related to prediction of acquiescent silence.

Değişken	B	Sh	β	t	p	İkili r	Kismi r
Sabit	4.857	0.345	-	14.071	0.000	-	-
Distributive justice	0.086	0.136	0.064	0.634	0.527	0.039	0.039
Procedural justice	-0.382	0.145	-0.251	-2.256	0.021	-0.078	-0.068
Interactional justice	-0.551	0.145	-0.359	-3.797	0.000	-0.229	-0.207
R= 0.478	R ² = 0.23						
F ₍₃₋₂₉₆₎ = 25.725	p = 0.00						

defensive silence was positive and significant ($r = 0.71$, $p < .01$), it is seen that their relation with prosocial silence was insignificant ($r = 0.01$, $p > .05$). Finally it is seen that there was no relation between defensive silence and prosocial silence ($r = 0.07$, $p > .01$).

Prediction of acquiescent silence

Multiple regression analysis results for prediction of acquiescent silence are given in Table 2. As a result of multiple regression analysis that aimed to reveal how do variables such as distributive justice, procedural justice and interactional justice that were thought of having impact on acquiescent justice, distributive, procedural and interactional justice variables showed a significant

relation ($R = 0.478$, $R^2 = 0.23$) with teachers' acquiescent silence ($F_{(3-296)} = 25.725$). These three variables together explain 23% of acquiescent silence. According to standardized regression coefficients, order of importance of predictive variables on acquiescent silence was as follows: Distributive justice ($\beta = 0.064$), procedural justice ($\beta = -0.251$), and interactional justice ($\beta = -0.359$). As the significance tests of regression coefficients are regarded, procedural justice ($p < .05$) and interactional justice ($p < .01$) explains the acquiescent silence negatively and significantly. Distributive ($p > .05$) justice isn't a significant predictor for acquiescent silence. As the relations between predictive variables and acquiescent silence is reviewed, as the impact of procedural justice ($r = -0.078$) and [other predictive variable's impact is checked a correlation of ($r = -0.068$)], as the impact of interactional

Table 3. Regression analysis results related to prediction of defensive silence.

Değişken	B	Sh	β	t	p	İkili r	Kısmi r
Sabit	3.691	0.248	-	12.980	0.000	-	-
Distributive justice	-0.338	0.104	-0.226	-2.322	0.047	-0.300	-0.078
Procedural justice	0.148	0.116	0.148	1.274	0.204	-0.284	0.075
Interactional justice	-0.459	0.119	-0.395	-3.863	0.000	-0.365	-0.223
R= 0.450	R ² = 0.21						
F ₍₃₋₂₉₆₎ = 20.871	p = 0.00						

Table 4. Regression analysis results related to prediction of prosocial silence.

Değişken	B	Sh	β	t	p	İkili r	Kısmi r
Sabit	2.649	0.342	-	7.743	0.000	-	-
Distributive justice	0.150	0.137	0.116	1.096	0.274	0.133	0.064
Procedural justice	-0.171	0.152	-0.142	-1.127	0.261	0.102	-0.065
Interactional justice	0.239	0.148	0.176	1.614	0.008	0.145	0.093
R= 0.162	R ² = 0.26						
F ₍₃₋₂₉₆₎ = 2.669	p = 0.042						

justice ($r = -0.229$) and [other predictive variable's impact is checked, a correlation of ($r = -0.207$)] is seen.

Prediction of defensive silence

Multiple regression analysis results for prediction of defensive silence are given in Table 3. As a result of multiple regression analysis that aimed to reveal how do variables such as distributive justice, procedural justice and interactional justice that were thought of having impact on defensive justice, distributive, procedural and interactional justice variables showed a significant relation ($R = 0.450$, $R^2 = 0.21$) with teachers' defensive silence ($F_{(3-296)} = 20.871$). These three variables together explain 21% of defensive silence. According to standardized regression coefficients, order of importance of predictor variables on defensive silence was as follows: Procedural justice ($\beta = 0.148$), distributive justice ($\beta = -0.226$), and interactional justice ($\beta = -0.395$). As the significance tests of regression coefficients are regarded, distributive justice ($p < .05$) and interactional justice ($p < .01$) explains the acquiescent silence negatively and significantly. Procedural ($p > .05$) justice isn't a significant predictive for defensive silence. As the relations between predictive variables and defensive silence is reviewed, as the impact of distributive justice ($r = -0.300$) and [other predictive variable's impact is checked, a correlation of ($r = -0.078$)], as the impact of interactional justice ($r = -0.365$) and [other predictive variable's impact is checked a correlation of ($r = -0.223$)] is seen.

Prediction of prosocial silence

Multiple regression analysis results for prediction of prosocial silence are given in Table 4. As a result of multiple regression analysis that aimed to reveal how do variables such as distributive justice, procedural justice and interactional justice that were thought of having impact on prosocial justice, distributive, procedural and interactional justice variables showed a significant relation ($R = 0.162$, $R^2 = 0.26$) with teachers' prosocial silence ($F_{(3-296)} = 2.669$). These three variables together explain 26% of prosocial silence. According to standardized regression coefficients, order of importance of predictor variables on prosocial silence was as follows: Interactional justice ($\beta = 0.176$), distributive justice ($\beta = 0.116$), and procedural justice ($\beta = -0.142$). As the significance tests of regression coefficients are regarded, only interactional justice ($p < .05$) explains the prosocial silence positively and significantly. Distributive justice and ($p > .05$) procedural justice ($p > .05$) aren't a significant predictive for prosocial silence. As the relations between predictive variables and prosocial silence is reviewed, as the impact of interactional justice ($r = 0.145$) and [other predictive variable's impact is checked, a correlation of ($r = 0.093$)] is seen.

Structural equation model

In this part of the study, a model showing the influence rate of organizational justice and organizational silence

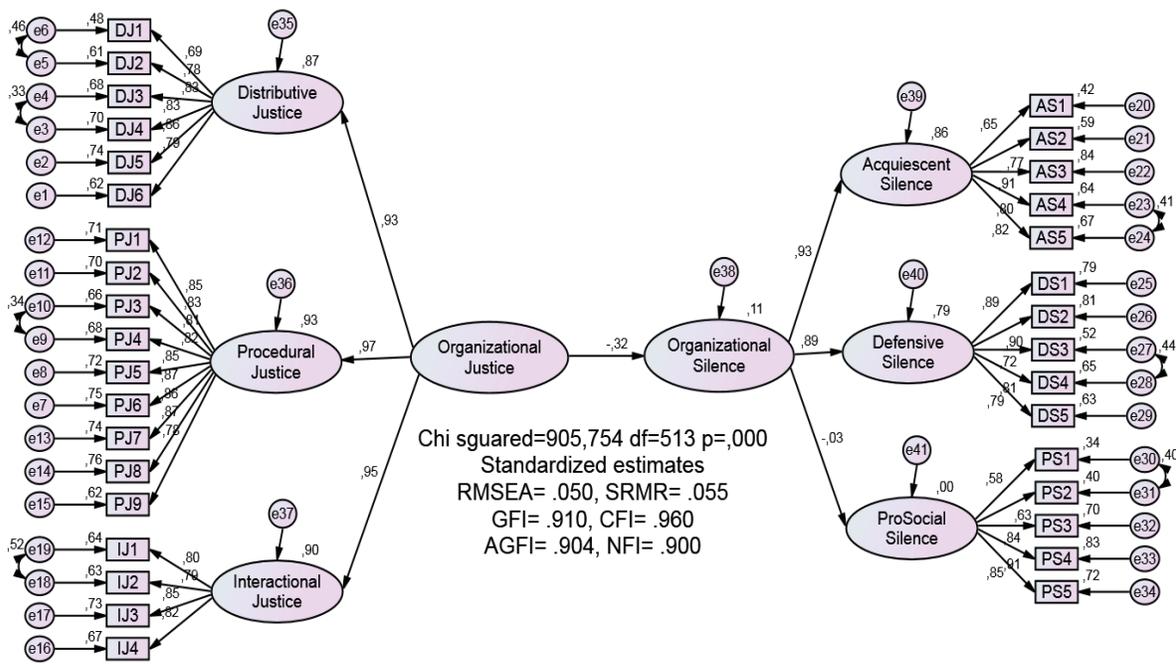


Figure 3. Structural Equation Modelling and Analysis Results of Hypothesis.

latent variables to each other and the explanation rate of each other. While this model was developed, testing of the studies hypotheses was considered. Structural equation model that was developed with this purpose can be seen in Figure 3.

Model's fit indexes that were analyzed by considering the MI values (Modification Indices) was found as following: RMSEA=.050; SRMR=.055; CMIN\DF=1,770; GFI=.910; CFI=.960; AGFI=.904; NFI=.900; Chi squared=905,754; df=513 and p=.000. This result shows that the fit values of the model is acceptable and at desirable rate. (Bayram, 2010; Kline, 2005; Şimşek, 2007). Organizational justice scale has three latent variables and 19 observed variables. While distributive justice latent variable has .93 relation (correlation, impact) coefficients, procedural justice latent variable has .97 coefficients and interactional justice latent variable has .95. While factor loads of observed variables in distributive justice latent variable changes between .69 and .86, factor loads of observed variables in procedural justice latent variable changes between .78 and .87 and factor loads of observed variables in interactional justice latent variable changes between .80 and .85. Organizational silence scale has three latent variables and 15 observed variables. While acquiescent silence latent variable has .93 relation (correlation, impact) coefficients, defensive silence latent variable has .89 coefficients and prosocial silence latent variable has -.03. While factor loads of observed variables in acquiescent silence latent variable changes between .65 and .91, factor loads of

observed variables in defensive silence latent variable changes between .72 and .90 and factor loads of observed variables in prosocial silence latent variable changes between .59 and .91. As the sub- purposes of this study were regarded, following results were reached:

As the standardized regression coefficients (Beta) that were reached as a result of the study and that are given in Figure 3 is reviewed, it is seen that the organizational justice has a negative impact on organizational silence ($\beta = -0.32; p < 0,05$). According to this result, it confirms the sub-purpose namely "Do elementary school teachers' perceptions for organizational justice predict their organizational silence significantly?" Besides, as the prediction power of the organizational justice for organizational silence is reviewed, it is seen that organizational justice explains the organizational silence at a rate of 11%. In other words, it can be said that the change occurs in teachers' perception of organizational silence depends on their perception of organizational justice at arate of 11%. This result confirms the sub-purpose namely "Do elementary school teachers' perceptions for organizational justice explain their organizational silence negatively and significantly?"

DISCUSSION AND CONCLUSION

In this study, relation between teachers' perception for organizational justice and their organizational silence was

examined. Results of the study confirm the thought that organizational justice is a significant variable that predicts teachers' organizational silence. Results showed that teachers' perception level for interactional justice is higher than distributive justice and procedural justice. This finding supports Viswesvaran and Ones's (2002) thesis that in prediction of employees' manner and behaviors, procedural justice plays a more important role comparing to other justice types. Söyük (2007) who examined organizational justice's impact on job satisfaction found that attendees' perception for interactional justice was higher than other justice types and this was followed by procedural and distributive justice.

Thus, teachers that took place in the study expressed that rather than existence or absence of related formal processes, their perception of justice was affected more by the feeling of trust and significance in their relation with their managers. Employees that work through this kind of fair interactions can have the belief that their organization values them (Moorman, 1991). Perceptions of justice, especially perception for procedural and distributive justice's being low is important. As known, when individuals perceive the justice in workplaces, manners such as organizational citizenship and commitment to the organization decrease and quits from the organization start.

Dimensions of organizational silence, defensive silence was the one that was perceived at the highest grade, while prosocial silence was the lowest perceived one. This means, teachers stated that their prosocial silence where they do not share confident informations belonging to individuals and organization with inappropriate people without, saving the confidentiality and keep the information in favor of the organization without forcing or instruction of their organization by showing a cooperation tendency was at high grade, on the other hand their defensive silence that includes sparing their ideas, thoughts and knowledge for protecting themselves was at a low grade. Employees may from time to time spare their ideas, knowledge and thoughts about job in favor of the future of their job or for the benefit of their workmates. Especially in it has a great significance both for the organization and themselves that they do not share confident information to the organizations they compete with and stay silent about this. It is important for finding solutions to problems that individuals do not stay silent in fear for self-protection and express their thoughts freely. It is thought that small problems that may cause greater problems within an organization can be solved with a defensive voiceness (Tayfun and Çatır, 2013). Also in study of Şimşek and Aktaş (2012) it was seen that attendees' silence grade points were generally high. Among sub-factors of silence, values of acquiescent and defensive silence were close to each other, it was interesting that highest value was with interactive silence dimension. This situation shows that interactive silence is adopted by individuals for more.

Interactive silence complies with positive factors such as helping others, protection, transcendence. In Kahveci's (2010) study that reveals teachers' silence situations, it was found that teachers stay silent and do not express their feelings, thoughts and problems because of their managers' behaviors. Some studies performed over silence (Milliken et al., 2003; Vakola and Bauradas, 2005) revealed that especially lower management is an important factor in employee silence, and managers that are closed to employees' ideas and suggestions and do not like having negative feedbacks cause the employees give in to the present status quo and stay silent in a passive way. Managers' ignorance of the ideas and suggestions of the employees -even though they look like they listen to them- can cause the employees to give up. In this situation, the employees believe that they cannot change the present situation and prefer to wait in a learned helplessness.

In the study, there were also positive and significant relation between distributive justice, procedural justice and interactional justice and also between procedural justice and interactional justice. Besides, results of research showed that teachers' perception for distributive, procedural and interactional justice was in negative relation with acquiescent silence and defensive silence, and in positive relation with prosocial silence. These findings can be interpreted as a decrease in teachers' acquiescent and defensive silence and an increase in their prosocial silence, when their perceptions for organizational justice increase. Results of regression analysis showed that acquiescent silence is predicted negatively and significantly by procedural justice and interactional justice, defensive silence is predicted negatively and significantly by distributive and interactional justice and prosocial silence is predicted positively and significantly only by interactional justice. One of most important findings here is that as acquiescent silence and defensive silence are affected negatively by their predictives, prosocial silence is affected positively. This means, in parallel with correlation analysis while teachers' perception for distributive and interactional justice increases, their acquiescent silence decreases; similarly, their defensive silence decrease, while their perception for distributive and interactional justice increases; in return teachers' defensive silence increases, while their perception for interactional justice increases. Another important finding is that the interactional justice predicts all three dimensions (acquiescent, defensive and prosocial) of interactional justice significantly. There is a positive relation between employees' expressing themselves in organization, their feeling themselves safe psychologically and organization's being open for communication in the level of management (Botero and Dyne, 2009). It is believed that speaking up is both natural and necessary. However, as everyone who has a job knows, this is not easy (Detert

and Edmondson, 2005). Researchers (Morrison and Milliken, 2000) focused on employees' feelings and thoughts depending on talking about the improvement opportunities and perceived injustice. When they believe that speaking up does not do any benefit, they lose hope and become silent. People speak up, only if they feel safe and believe that they can create a difference.

In this study, along with multiple regression analyses that were performed with purpose of revealing the relation of organizational justice with organizational silence dimensions, their rate of impact and prediction on each other; also a model that shows the general impact rate and prediction rate of organizational justice and organizational silence latent variables. According to this model, organizational justice has a negative and significant impact (at a rate of -0.32) on organizational silence. In addition to this, it was seen that organizational justice explains organizational silence at a rate of 11%. These results show that elementary school teachers' perception for organizational justice affects their organizational silence negatively and their perception for organizational justice explains their organizational silence. It is also observed that these results comply with other studies' results in literature. In studies of Dabbagh et al. (2012), it was seen that there is a significant relation between organizational justice and organizational silence and significant relations between distributive justice and organizational silence, procedural justice and organizational silence, interactional justice and organizational silence. Thus, distributive justice, procedural justice and interactional justice affect organizational silence. These three dimensions explain 64% of organizational silence. Importance order of these dimensions on silence is as follows: interactional, procedural and distributive. According to this, when employees perceive that their managers treat them fair and just, there will be no differentiation in organization and personal endeavors and the works will be more valuable, employees will feel more significant and all of these will increase the commitment and belief in the organization. Tangirala and Ramanujam (2008) found a negative relation between organizational justice and organizational silence, while Tulubas and Celep (2012) found that perceived justice has a strong impact on employees' organizational silence and organizational justice is an important predictor of organizational silence.

CONCLUSION

Results of this study showed that decrease of teachers' silence level is affected by their perception for justice in subjects like distribution of organizational incomes and processes followed while this decision is made and the way of delivery of this. Thus, it will be possible to decrease employees' silence levels by improving their

perception of justice towards their organization. In this respect, as long as individuals' perception for justice about manners or people and managers in the organization and for various interactions towards statements about decisions made is positive, teachers become more confident in speaking up their mind about the problems they encounter and show the skill to provide greater benefits to the organization by taking their feelings and behaviors under control.

Conflict of Interests

The author has not declared any conflict of interest.

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Full Length Research Paper

Pre-service teachers' cognitive competencies to use the approaches in mathematics teaching: Discovery learning

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This study aims to present the cognitive competences of the pre-service teacher about discovery learning approach in mathematical education. The study was conducted with 37 mathematics pre-service teachers who study Special Teaching Methods lesson in a state university in Turkey. Throughout the lesson, the approaches used in learning were examined with the pre-service teachers. Afterwards, some open-ended questions related to discovery learning approach were asked for the pre-service teachers to answer and they were expected to prepare an activity in which they would apply the approach and then evaluate it. After analyzing the retrieved data with qualitative research techniques, three main findings were achieved: The pre-service teachers have enough theoretical information on discovery learning approach and are able to meaningfully explain that information; their competences at preparing an activity in which they will apply discovery learning are quite low; most of them did not compare the discovery learning approach to other approaches.

Key words: Discovery learning, mathematics education, pre-service teacher, cognitive competency.

INTRODUCTION

The issue regarding what is learning and how it occurs kept many researchers busy (Bruner, 1961; Ausubel, 1968; Inhelder, Sinclair and Bovet, 1974; Lambert and McCombs, 1998) and initiated a lot of discussions for many years. These discussions continued as various learning approaches emerged and some of them were rather accepted in different subjects during different periods (Mayer, 2004).

Cognitive approach which was firstly established by

Piaget and is one of the suggested approaches emphasizes that learning occurs in the mind and thus, points out that the activities in the mind shall also be studied (Davis, 1990; English, 1995; OECD, 2003). As the cognitive psychology renewed its interest in the fields such as the concept formation, problem solving, connection among cognitive structures and behavior, a form of cognitivism is referred as constructivism (Noddings, 1990). This theory, which proposes that the

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new information to be achieved shall be associated with the existing information, is named as constructivist approach due to the fact that it resembles forming a new structure in a person's mind (English, 1995; Ojose, 2008). Almost all of the constructivists believe that information is not achieved by simply learning from the teacher but by actively constructing by the student and accept that knowing is not the discovery of the already existing and objective information (Von Glasersfeld, 1987; Kilpatrick, 1987; Noddings, 1990; Lesh, Doerr, Carmona and Hjalmarson, 2003).

With the students having an inefficient academic level in mathematics dragging mathematical education into new quests, constructivism, which is a different perspective in learning, also has been the center of many experimental and theoretical studies in mathematical education (Simon, 1995; Jaworski, 2006). All of these played a part in the formation of the mathematical reform and brought along the reforms applied in mathematics programme (Lin and Cooney, 2001). In many countries, these studies are dependent on various standards and in Turkey, a new mathematics programme based upon constructivism which will be applied in primary and secondary education classes in 2005 are actualized. By this way, it is aimed to bring students in skills such as reasoning, associating, and problem solving by mentally and physically activating them (MEB, 2010).

Implementing the reform movements, in other words, effectively performing new approaches instead of traditional ones depends on teachers (Battista, 1994; Çakıroğlu and Çakıroğlu, 2003). However, constructivism, despite providing a useful structure for mathematical thinking and leading significant ways affecting the reform in mathematical education, does not suggest many ideas on how to teach mathematics and foresee a specific model (Simon, 1995). Thus, it is of utmost importance that prospective teachers have the required proficiencies for that matter. Prospective teachers must be familiar with useful curriculum materials, learning various general and specific education subject models and researching some approaches evaluating the student comprehension during the preparation process before the period of service in which they accumulate basic information for reformist education. However, the focus must be on comprehending when, where, how and why the specific approaches will be used, instead of variety (Feiman-Nemser, 2001).

Many pre-service teachers are not ready to use these approaches which are required by the educational reform (Herman and Gomez, 2009). Therefore, this study aims to have an idea on the cognitive proficiencies formed of prospective teachers before they put the new approaches in reformist thinking into practice from theory. Thus, out of all the approaches, the discovery learning approach was examined. It was aimed to demonstrate what the pre-service teachers understand from this approach, how they think they will apply it in mathematical education and

also how much of the competences required for preparing an appropriate activity they have, by doing so, it was targeted to form an opinion about cognitive competences related to the approach.

RESEARCH FRAMEWORK

Discovery learning

Bruner (1966), who improved the ideas of Piaget and asserted the theory of learning through discovering, emphasized that the structure of the topic should be comprehended in learning and concepts should be indicated with basic forms (English, 1995) and defended that comprehending this structure correctly will take place by the individual's discovering the basic principles of the subject actively (Senemoğlu, 2005). Bruner (1966), stated that knowing is not a product but a process, he also remarked that learning how information is formed simplifies comprehending, remembering and using that information in a new context (Altun, 2010) and discussed that, thus, motivation and success will increase (Castronova, 2002). Therefore, students should be forced to analyze, apply and synthesize the information instead of receiving and assimilating it (Baki, 2006).

In discovery learning, learner is not informed about the target information or concept and this could be achieved by evaluating the available circumstances independently (Alfieri et al., 2011). This process, developed inductively (Baki, 2006), continues the assumptions based on systematic researches and intuition by organizing the examples guiding to generalization or conceptualization from basic to advanced (Jacobsen et al., 1985) and states that the teacher's duty is to guide the learner (Hammer, 1997; Svinicki, 1998).

There are two approaches in learning through discovering: First; it's an invention that is unstructured where the teacher lets the student find out the concepts and principles completely on their own, and the students are expected to find out the related concepts and principles on their own like scientists and they start and direct their studies mostly by themselves. Second; it's an inventions that is structured where the teacher determines the behaviors which will be learned, this provides the examples in which related concepts and principles are used and if necessary benefits from the examples contrasting with the related concepts and principles, also the student is expected to come up with the inference (Senemoğlu, 2005).

However, according to Bernstein et al. (2003) even though guidance shows a great performance in practice, too much guidance may affect the next performances negatively. Besides, it is believed that asking students to discover without being guided is not only less effective but also has negative consequences such as finding out information that includes misconceptions and is

unorganized and incomplete (Kirschner et al., 2006). Mayer (2004), emphasizes that unguided discovery learning tasks did not help learners discover problem-solving rules, conservation strategies, or programming concepts. Also, although constructivist-based approaches benefits, he mentions its lack of structure.

Cognitive competency

Cognitive field in learning topics includes the learning where individual's mental aspect preponderates and the objectives within this field are sorted from basic to complex, from concrete to abstract in a manner that they are prerequisite for each other: Knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom et al., 1956; Simpson, 1972; Krathwohl et al., 1973).

Knowledge: Level consists of the behaviors such as the person's recognizing specificities about any object or event when he/she sees it and telling or repeating by heart when he/she is asked.

Comprehension level: Is expression, assimilation, and interpretation of the objectives that are gained on knowledge level without losing their meaning.

Application level: Is the person's applying the knowledge by solving the problem in a situation, which is new to him/her, based on the learning on knowledge and comprehension levels.

Analysis level: Is cognitively decomposing a whole or pattern of knowledge in terms of their items, relations and organizations.

Synthesis level: Is gathering and composing the items according to certain relations and rules in such a way that it consists of features such as innovation, originality, and creativity.

Evaluation level: Is the person's determining whether the end product is convenient in terms of providing competences or not (Seddon, 1978; Bloom, 1994; Krathwohl, 2002).

OECD (2003), uses three levels as indicators in order to describe the students' cognitive skills within the scope of Programme for International Student Assessment (PISA) which are as follows:

1. **Reproduction:** the level in which the known content, previously used knowledge, standard algorithm and elementary formulas are used and basic processes are applied,
2. **Connection:** the level in which the less known content is interpreted and explained, different systems of representations are associated, and the required strategies for solving quasi-familiar problems are determined and applied,
3. **Reflection:** the level in which comprehension is required; reflection, creativity, and the knowledge about

how to solve unfamiliar problems are associated; observed results are generalized and justified; and abstraction takes place.

As the knowledge is formed in the mind, the similarities separated from many specific examples create awareness, thus, the knowledge is abstracted in the mind as a consequence of generalizations (Ohlsson and Lehtinen, 1997). Hershkowitz et al. (2001), studied this process that takes place cognitively and developed the RBC model by describing the epistemic actions as recognizing (R), building with (B) and constructing (C). According to this model which allows every action to be observed and helps the process to be understood better, these epistemic actions are discussed as follows:

Recognizing is the process, in which the person deals with activities he/she is familiar with from his previous activities; and associates his/her current activities with his/her old activities.

Building with, is the process during which it is aimed to solve a problem or justify a case; and the elements of the information are combined together.

Construction is the process, in which the person gets his/her knowledge together and so as to create a new structure.

They added the Consolidation process in order to emphasize the independency and elasticity of the abstraction and created the RBC+C model.

In Figure 1, in order to clearly present the cognitive structure that is formed in the mind of a person, the association of the RBC+C Model (Hershkowitz et al., 2001), PISA Competences Clusters (OECD, 2003), and Cognitive Domain Taxonomy (Bloom et al., 1956) which are mentioned above, is demonstrated. The actions enabling the association were formed and it was aimed to achieve a general structure about the cognitive process.

METHODOLOGY

This study is a qualitative research which was done with 37 participants (13 male, 24 female) from mathematics pre-service teachers who are on their 4th year of faculty of education which lasts five years. The participants in the study successfully completed basic education lessons such as Introduction to Educational Science, Educational Psychology, Teaching Principles and Methods on the previous semesters and were taking Special Teaching Methods lesson during the semester in which this study was conducted. Some approaches about education such as Ausubel's (1963) verbal-meaningful learning approach, Freudenthal's (1973) realistic mathematical education approach and Bruner's (1961) discovery learning approach were studied in detail throughout this lesson lasting for four hours in a week and the applications of these approaches in mathematical education were discussed and interpreted.

In this study, discovery learning approach is dealt with in order to reveal how pre-service teachers construct these approaches applied in education in their minds and to determine their cognitive level. Also, the data about the study were collected at the end of the lessons lasting for almost 6 h.

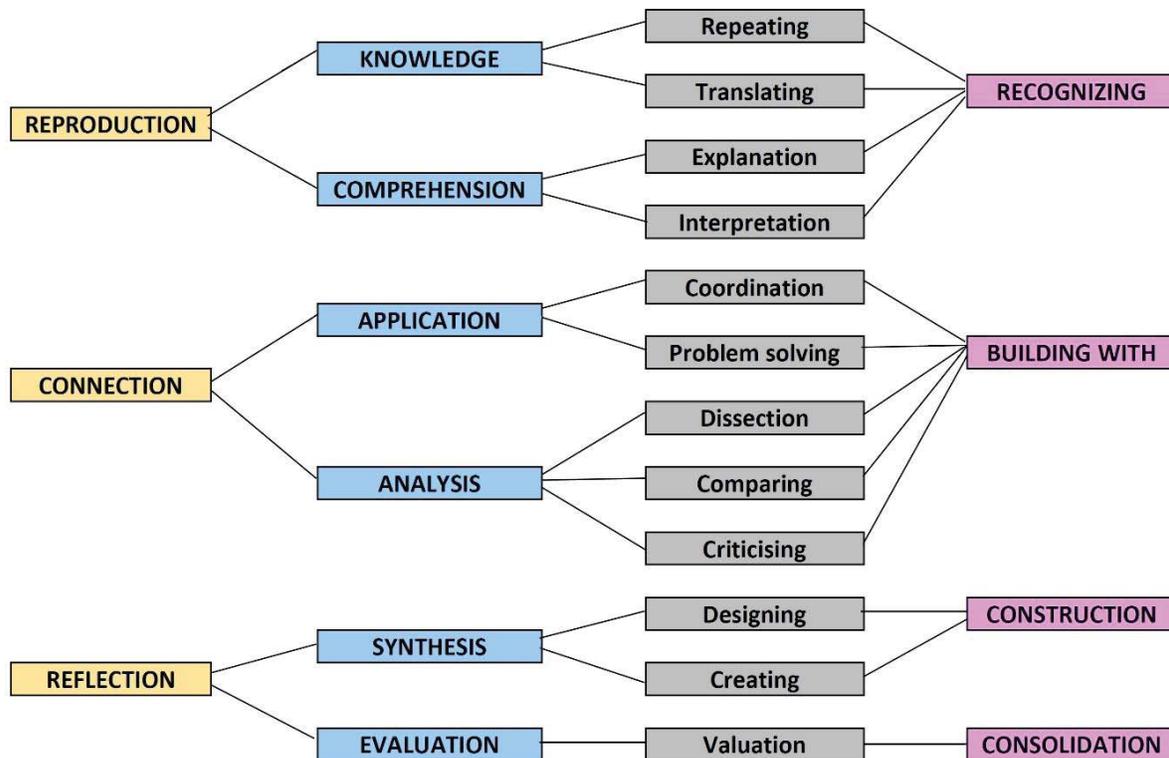


Figure 1. The Relations of Cognitive Competency (Bloom, Engelhart, Furst, Hill and Krathwohl, 1956; Hershkowitz, Schwarz and Dreyfus, 2001; OECD, 2003).

Data collection

First of all, theoretical information regarding discovery learning approach was given to pre-service teachers for 6 h, and later activities on mathematics teaching were applied and discussed in the class. Discussions in the class were mostly about the pre-service teachers' interpretations about the process, teacher's and student's role throughout the teaching and learning process. The activities in the class were about concepts underlying various outcomes that takes place in teaching programme such as Fibonacci Sequence and Golden Ratio, The Sum of Interior Angles of Triangle, π number, Identity of $(x+y)^2=x^2+2xy+y^2$, area of rectangle, and Pythagorean Theorem. In the end of this process, open ended questions were asked to pre-service teachers and furthermore, each of them was asked to prepare an activity to apply discovery learning approach in mathematical education. The pre-service teachers were asked to explain the activities they would prepare and their ideas on the questions, in detail and written format. Thereby, the structure about the approach constructed in the pre-service teachers' minds was studied. The questions asked to the participants are as follows:

1. What is discovery learning?
2. Can you explain the activities applied in the class about the discovery learning approach?
3. Prepare an activity similar to the activities applied in the class about the discovery learning approach. Explain the process in the activity you will prepare step-by-step.
4. Prepare your own activity for mathematical education related to the discovery learning approach. Evaluate the activity you prepared and the whole process.

The data analysis

The pre-service teachers' answers to the open ended questions and the activities prepared by them were analyzed by qualitative research techniques in order to determine their cognitive competencies about the approaches. Hence, firstly, the association of taxonomy about cognitive learning domain (Bloom et al., 1956), PISA Competency Clusters (OECD, 2003) and RBC+C model (Hershkowitz et al., 2001), all of which are summarized in Figure 1, was taken as the baseline in creating the categories. Thereafter, there were continuous discussions about creating common themes by dividing these categories into sub-categories. (Creswell, 1998; Patton, 1990). The categories, sub-categories, and common themes were again studied by two experts of the field individually in order to improve their reliability of the study and they reached an agreement on the created categories and themes (Berg, 2001; Yıldırım and Şimşek, 2005).

RESULTS AND DISCUSSION

Answers and activity samples of 37 pre-service teachers who participated in the study were evaluated and common themes were formed according to their cognitive competencies. For this, codifications done for the data analysis, and categories and subcategories formed in finding common themes were summarized in Table 1. And also, frequencies of the findings belonging to the categories and subcategories were demonstrated in this

Table 1. The Frequencies and Percentages of the Categories and Sub-Categories of the Pre-Service Teachers' Competences

CATEGORY		SUBCATEGORY	FREQUENCY	(%)
REPRODUCTION	KNOWLEDGE	Recalling of information by <i>repeating</i> or <i>translating</i>	35	94,6
		Deficient or inaccurate recalling of information	2	5,4
		No answer	0	0
	RECOGNIZING	<i>Interpretation</i> about the knowledge	13	35,1
		<i>Explanation</i> about the knowledge	21	56,8
		Deficient or inaccurate comprehension about the knowledge	3	8,1
	APPLICATION	No answer	0	0
		Posing a familiar problem about the knowledge and <i>solving</i> this <i>problem</i> as an application	17	46
		<i>Coordination</i> to pose a familiar problem about the knowledge	13	35,1
		Deficient or inaccurate application about the knowledge	1	2,7
		No answer	6	16,2
		CONNECTION	BUILDING WITH	<i>Criticizing</i> about the parts of knowledge by analyzing the familiar problem.
<i>Dissection</i> or <i>comparing</i> the parts of the knowledge by analyzing the familiar problem.	4			10,8
Deficient or inaccurate analysis of the knowledge	1			2,7
SYNTHESIS	No answer		24	64,9
	<i>Creating</i> an original or an unfamiliar problem about the knowledge		5	13,5
	<i>Designing</i> an original or an unfamiliar problem about the knowledge		4	10,8
EVALUATION	Deficient or inaccurate synthesis about the knowledge		5	13,5
	No answer		23	62,2
	REFLECTION		CONSOLIDATION	Making <i>valuation</i> by passing a judgment on the original or unfamiliar problem about the knowledge
No answer		36		97,3

table. The findings related to the cognitive competencies of the pre-service teachers were explained within each category by using their exact quotations.

Reproduction recognizing

Knowledge

Out of all 37 pre-service teachers participated in the study, 35 of them (94.9%) answered the question of 'what is discovery learning approach?' correctly by repeating or translating the definition they had learned earlier.

Examples from the quotations belonging to the answers given by the participants are as follows:

"Enabling the student to achieve a concept or information with the guidance of the teacher, by the help of teacher's preparing the necessary setting with the knowledge he/she had, and by making comparisons and associations..." (12th pre-service teacher-repeating).

"The teacher draws a road map for the students about how he/she will promote them to find a concept or information, and guides them to continue from this route, enables them to achieve the result by themselves, and

gives them the opportunity to discover the information on their own..." (37th pre-service teacher- translating).

"The student's achieving the information on his/her own by following an inductive way..." (2nd pre-service teacher-translating).

2 participants (5.4%) defined the discovery learning approach deficiently or inaccurately. There was not any participant who did not answer the question. The quotations belonging to the deficient and incorrect answers given by the pre-service teachers to the question are as follows:

"It is the teaching of a subject with examples more closely to the everyday-life. What is essential in this method is teaching through concretizing and dividing things into phases" (24th pre-service teacher-inaccurate)

"As seen from its name, it is teaching students by helping them discover things ..." (23rd pre-service teacher-deficient).

Referring to Ayer's (1936) definition, and considering the idea which states that even though the correct definition may not contain the definition itself or synonyms, it can still be translated by using equivalents; most of the sentences uttered by the pre-service teachers can be accepted as correct definitions and thus it is possible to say they are on the knowledge level of the reproduction-recognizing processes. Besides, only two pre-service teachers do not have adequate knowledge on the approach according to the idea which states that the ambiguous, complicated or inappropriate forms of definitions cannot be accepted as correct definitions.

Comprehension

In the answers given to the second question in which the pre-service teachers were asked to explain the in-class activities in order to see if they comprehended the discovery learning approach or not, it was observed that 34 (91.9%) of the participants comprehended the discovery learning approach accurately. When the answers were examined, it was seen that 13 (35.1%) of 34 participants interpreted the activities, and 21 (56.8%) of 34 participants explained the activities. Also, 3 (8.1%) of 34 participants were insufficient at explaining the activities. There were not any pre-service teachers who did not answer the question. Examples from the exact quotations from pre-service teachers who explain the activities *through interpretation* are as follows. The parts in quotation marks in the quotations draw attention to interpretations:

"Firstly, 'we tried to promote students to gain introductory information through numerical examples in order to

enable them to achieve generalizations' in the activity of finding the area of a rectangle. In other words, we helped them find the area of a general rectangle by starting from finding the areas of rectangles whose edge lengths are different. For this, for instance, we asked them to separate a rectangle whose edge lengths are 3 and 4 units into unit squares. We asked them to find how many unit squares the area of rectangle is formed of. Later, we applied similar condition for a different rectangle. For instance, for a rectangle whose edges are 2 and 5 units. We asked them how many unit squares there were in this rectangle and what the area of rectangle equals to. In the end, we asked them to find how many unit squares there were for an area of rectangle which was a and b units. For this, we demanded them to think about what to do instead of counting them one by one. We expected them to see that there were b unit square and a row in each row in total given that the width is 'a' unit and the height is 'b' unit. Hence, we waited for them to reach the generalization that they were the multiplication of edge lengths. *'Here our aim was to prepare the suitable setting and to make them obtain the information they did not know, with generalizations and step-by-step'*" (35th pre-service teacher).

"In the activity done for Pythagorean Theorem, firstly, we made them draw a right triangle whose edge lengths were 3, 4, and 5 units on a squared paper, then we made them draw squares having these edge lengths on hypotenuse and both other sides. After that, we separated these squares into unit squares and we asked them to cover the square which was formed on hypotenuse by using the squares which were formed on other sides. Our aim was to make them realize that the squares of 3 and 4 were equaled to the square of 5. Afterwards, we made them do a similar exercise for a right triangle whose legs were 6 and 8 units. We ensured them to see that the same cases occur in different triangles. *'Hence, we helped them to think of the examples from which they would make generalizations'*. In the end, they comprehended the information suggesting that the sum of the squares of the legs equal to the square of hypotenuse *'as if they had found out that information on their own'*" (27th pre-service teacher).

"While teaching the square of a binomial, *'we aimed to make them realize where this identity came from on their own'*. For this, we asked them to calculate the area of a square in the length of x unit. Then, we asked them to calculate its area again by increasing horizontal and vertical edge length by 1 unit, that is, by doing it x+1. *'We led them to associate it with the first square'*. Thus, they saw the identity of $(x+1)^2 = x^2 + 2x + 1$. We made them do a similar thing by extending it two more units, in other words, extending it to x+2 and enabled them to see it was $(x+2)^2 = x^2 + 4x + 4$. After that, we gave clues to enable them to generalize this case. We expected them to realize square of a binomial by this way. *'We tried to*

meaningfully teach them this identity and give them the opportunity to find it on their own” (29th pre-service teacher).

Examples from exact quotations belonging to pre-service teachers who only *explained* the activities are as follows:

“We made them divide a rectangle into unit squares in order to make them find the area of the rectangle. We asked how many unit squares it was formed from. Later, we made them associate it with its edges. We made them do it for other rectangles and find out how to calculate the area of any rectangle” (16th pre-service teacher).

“In the activity of finding Pythagorean relation, we first enabled them to see the areas of squares formed by legs is equal to the area of square formed by hypotenuse. For this, we made them to divide the areas into unit squares. We made them do the exercise with different examples such as 3-4-5 or 6-8-10 and they achieved the relation” (18th pre-service teacher).

“In the activity of obtaining square of a binomial, we took a square whose edge is in the length of x unit. We asked them what its area was. Next, we asked what its area would be when two consecutive edges were extended by 1 unit. We wanted them to see what is added to the area of the previous square for the area of the new square and expected them to obtain $(x+1)^2=x^2+2x+1$ identity. We asked similar questions when we extended the edges of the square by 2 units and expected them to get $(x+2)^2=x^2+4x+4$ identity. After that, we asked what would happen if the edge was extended by y unit and we expected them to get $(x+y)^2=x^2+2xy+y^2$ identity” (11th pre-service teacher).

3 Pre-service teachers, who explained the activities deficiently, were 1st, 23rd, and 24th pre-service teachers. Although, the 1st pre-service teacher defined the discovery learning approach correctly, he was insufficient in explaining on the comprehension level. 23rd and 24th pre-service teachers were seen to be in the category who defined the discovery learning approach deficiently or inaccurately on the knowledge level. Participants' exact quotations from their explanations about activities are as follows:

“We drew 3-4-5 triangle on the board. We made them look like squares and later divided two edges into unit squares and realized that the area of the square, one of whose edge is a hypotenuse, is 25 unit squares. Then, we gave them the formula and showed them examples” (23rd pre-service teacher).

“While teaching the area of a rectangle, we firstly explain the area, and then divide the rectangle into unit squares. We see that the sum of each unit square gives the total area of the rectangle. Furthermore, we also say that we

can calculate its area when we multiply two edges. Thus, we teach the area of rectangle by starting from unit squares” (1st pre-service teacher).

It was observed that the first pre-service teacher comprehend the method inaccurately from his statement in which he mentioned ‘firstly explaining the area and then trying to associate it with unit squares for calculating the area of the rectangle’ with the application of discovery learning approach. The 23rd pre-service teacher deficiently described the discovery learning on the knowledge level. The wrong expressions he used, such as ‘dividing the edges into squares’ and ‘making them look like squares’ and also, the other expressions he used for the approach demonstrate that he did not only comprehend the process deficiently, but also inaccurately. The 24th pre-service teacher’s case showed similarities with that of the 23rd pre service teacher. When we consider explaining, which can be referred as giving understanding to somebody else (Brown, 1978), and interpreting, which requires forming a broad understanding (OECD, 2009), as two procedures of unveiling and demystification (Fairclough, 1989); it is possible to say that the reason why most of the pre-service teachers explained or interpreted the approach accurately is because they comprehended the approach in a meaningful manner.

Connection building with

Application

In the answers given to the third question which was asked in order to reveal how much the pre-service teachers applied learning by discovery and in which they were asked to prepare a similar (familiar) activity for the discovery learning, it was observed that 17 participants (46%) developed a problem in preparing a similar (familiar) activity about the discovery learning and solved it; 13 participants (35.1%) tried to develop a similar (familiar) activity and ensure the coordination within the process; 1 participant (2.7%) carried out a deficient or inaccurate application; 6 participants (16.2%) did not answer the question related to the approach. Some examples from exact quotations of the process, in which the participants developed and solved a similar (familiar) problem about the approach, are as follows:

“We draw a square whose edge length is x unit. We ask them the area of that square and write x^2 in it. Then, we ask them to subtract 1 unit from two edge lengths of square and we see that the area of new square which is formed inside is $(x-1)^2$. We demand them to link the area of new square with the area of the first square and we obtain $(x-1)^2=x^2-2x+1$ identity from $x^2=(x-1)^2+(x-1)+(x-1)+1^2$ equation by subtracting the areas of the other parts from the area of the first square. Later, we make them

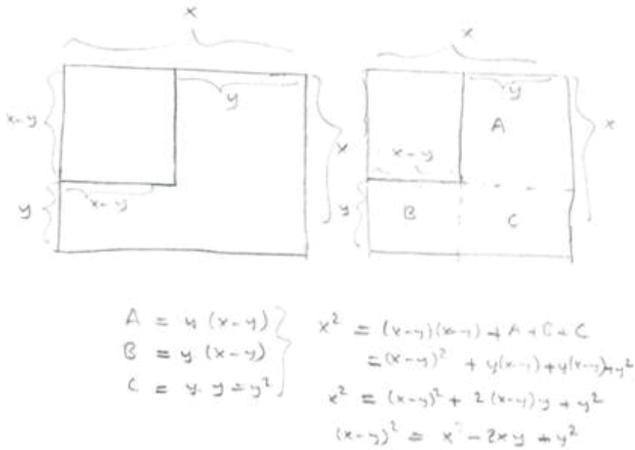


Figure-2. 25th Pre-service Teacher's Description.

think by asking what will happens when we decrease it by 2 units and we obtain $(x-2)^2 = x^2 - 4x + 4$ identity from $x^2 = (x-2)^2 + (x-2) \cdot 2 + (x-2) \cdot 2 + 2^2$ equation. Later, we demand them to reach a general idea by asking them what happens when it is decreased by y units and enable them to acquire $(x-y)^2 = x^2 - 2xy + y^2$ identity from $x^2 = (x-y)^2 + (x-y) \cdot y + (x-y) \cdot y + y^2$ equation" (25th pre-service teacher) (Figure 2).

As seen in the exact quotation, the participant developed " $(x-y)^2 = x^2 - 2xy + y^2$ identity" as a problem that is similar (familiar) to the activity in which teaching " $(x+y)^2 = x^2 + 2xy + y^2$ identity" was taught and solved the problem by explaining it according to the approach. Problem solving, finding what is known (Jonassen, 2000), in other words, can be described as any goal-directed sequence of cognitive operations (Anderson, 1980) from the cognitive point of view. The problems are referred as routine problems in which specific data substitute for general problems with formal solving or a clear example is followed step by step (Polya, 1957) and these are problems whose solutions are known beforehand (Mayer, 1998). In this sense, the process of preparing an activity similar (familiar) to the ones done in the class can be considered to be routine problem solving process. Thus, the fact that almost half of the pre-service teachers tried to solve a similar (familiar) problem can be interpreted as they are successful at the application process and have the cognitive competence in applying the approach. An exact quotation about the process during which the pre-service teachers tried to develop a similar (familiar) activity and obtain coordination for it is as follows:

"We can make the students figure out how to obtain the area of parallelogram. To do so, we draw a parallelogram. They are asked to examine the figure and find out the similarities between the figure and a rectangle. They are expected to figure out the fact that rectangle is a special form of parallelogram whose edges intersect

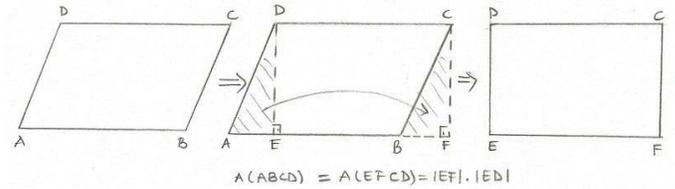


Figure-3. 16th Pre-service Teacher's Description

vertically. We draw heights on the figure and try to see that the triangles formed in the edges are equilateral triangles. According to this, it is observed that the figure, which is obtained by cutting AED triangle and putting it on BFC triangle, is a rectangle. After that, by recognizing that the area of the rectangle is the same as the area of the parallelogram, we find out that we can calculate the area of parallelogram from the area of the rectangle. The area of rectangle can be obtained by separating into unit squares as we did in the activities. Thus, we can teach them to calculate the area of parallelogram by using the area of rectangle which was taught by discovery learning." (16th pre-service teacher) (Figure 3).

The pre-service teacher tried to develop an activity for 'finding the area of parallelogram' that was similar to the activity of 'finding the area of rectangle', which was done in the class. In the activity, they tried to develop a similar problem related to the approach which was examined in the class, however, when the whole activity process is taken into account, the process of applying the approach is rather related to the association of the activity about the area of the rectangle. Therefore, the process was evaluated as enabling the coordination for solving the problem, in a different category. An example for the deficient or inaccurate activity about the approach which was applied by one of the participants is as follows:

"Let's suppose that the student is curious about π . While explaining this, we show them two pictures of two bridges whose rotations and slopes are similar to each other. We can talk about a ratio between these two. In a similar sense, the student can comprehend that the ratio of the circumference to the diameter of the circle is equal to π and it is the same case for all circles by discussing about the relationship among all circles (1st pre-service teacher).

It was observed that the first pre-service teacher who performed the application deficiently or inaccurately also fell into the category of those who comprehended the approach deficiently or inaccurately on the comprehension level. Moreover, 2 of the 6 pre-service teachers (23rd and 24th pre-service teachers), who did not give, state their opinion on developing an activity similar to the ones done in the class, failed on knowledge and

comprehension level. Although, the others were successful at these processes, they failed at the application processes.

Analysis

In the study, in the third question, in which the pre-service teachers were asked to prepare an activity similar to the ones applied in the class, were demanded to explain these activities which they prepared by themselves step by step.

Thus, it was aimed to examine the applications of the participants about the process, their analysis throughout the process, and the associations the participants created. When the activities and explanations were examined it was observed that 13 participants explained the activity process.

Furthermore, 8 of them (21.6%) developed, solved and then criticized a similar (familiar) problem about the approach, 4 of them (10.8%) only solved the similar (familiar) problem they developed and 1 of them (2.7%) failed at correctly solving the problem. The other 17 participants (46%) who prepared a similar (familiar) activity for the third question did not explain the activities they prepared. 6 participants (16.2%) neither answered to the question nor prepared an activity and 1 participant (2.7%) prepared an inaccurate activity.

An example from the exact quotations of the pre-service teachers who analyzed and criticized a similar (familiar) problem related to the approach is as follows:

“Cube of binomial can be taught by discovery learning and the student can be enabled to realize that identity by himself step by step. First of all, we ask students to draw a cube whose edge lengths are x unit, then we see that the volume of the cube is x^3 . After that, we ask students to increase the edges of the cube by 1 unit and see that the volume of new figure is $(x+1)^3$. Here, in order to promote them to come up with associations, we ask them what we need to add to the old cube in order to achieve the new cube. Thus, we can mark that the volume of new cube is equal to the sum of the volumes of the four objects in it. Then this will be $x \cdot x \cdot 1 + x \cdot 1 \cdot (x+1) + (x+1) \cdot (x+1) \cdot 1 + x^3$. Therefore, $(x+1)^3 = x^3 + 3x^2 + 3x + 1$ identity can be obtained from this. We ask them about the edges of the cube when its edges are expanded by 2 units for a similar case and expect them to obtain the identity of $(x+2)^3 = x^3 + 3 \cdot 2^2 \cdot x + 3 \cdot 2 \cdot x^2 + 2^3$. Later, we asked them to make generalization about what the volume of new figure will be if the edges are extended by y unit, and obtain the identity of $(x+y)^3 = x^3 + 3xy^2 + 3x^2y + y^3$ from $(x+y)^3 = x^3 + x \cdot y \cdot (x+y) + x \cdot x \cdot y + y \cdot (x+y) \cdot (x+y) = x^3 + x^2y + xy^2 + x^2y + x^2y + xy^2 + y^3$ equality. (Figure 4).

‘Our aim is to help the students realize the information on

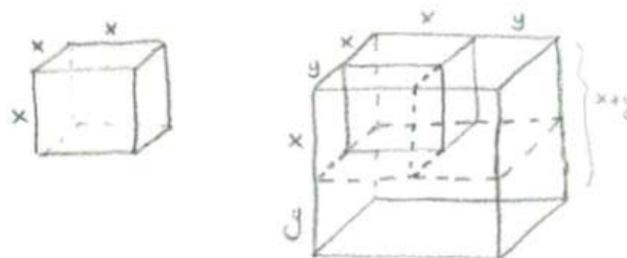


Figure-4. 35th Pre-service Teacher’s Description.

their own by guiding them. We should help them focus on their aim without being distracted by other things and perceive the target information while guiding them. In other words, we should help them see the relation among the given information step by step and obtain a general knowledge. We continue by extending it by 1 unit, 2 units and so on, and obtain the identity by extending it by y units. Since they obtain that information by putting the pieces together by themselves, they can learn this identity more permanently. Instead of giving the whole information and then teach them by dividing it into pieces as done in learning through presentation, we aim to make them put these pieces together by themselves and obtain the whole information inductively’ ” (35th pre-service teacher).

The study of a participant, who developed, dissected and compared a similar problem, is as follows:

“The identity of the difference between can be taught by discovery learning. First of all, we draw a square whose edge length is x unit. We mark that the area of this square is x^2 . Next, we ask them to draw a square whose edges are on the edges of the square and we ask them to link the areas of new squares with the first square. ‘Just as we obtained the square of a binomial’, since the difference between the area of the old square and the area of the new square is the sum of the areas of the other parts, here, $x^2 - 1^2 = (x-1) \cdot 1 + (x-1) \cdot x$ equality, that is, $x^2 - 1^2 = (x-1) \cdot (x+1)$ is obtained. We ask them to do something similar for a square in the length of 2 units and we obtain $x^2 - 2^2 = (x-2) \cdot 2 + (x-2) \cdot x = (x-2) \cdot (x+2)$. So, they reach an opinion about both case 1 and 2. Then, we demand them to think about what happens in the square whose edge lengths are y unit in order to make them reach a generalization and expect them to obtain the identity of $x^2 - y^2 = (x-y) \cdot (x+y)$. Thereby, we can obtain $x^2 - y^2 = (x-y) \cdot (x+y)$ identity.

‘Our aim is to help the students realize general information by providing them with some cases through which they can reach a generalization. Here, the steps given for generalizations are their realization of what happens for y unit when it continues as 1 unit, 2 units and so on’ (29th pre-service teacher) (Figure 5).

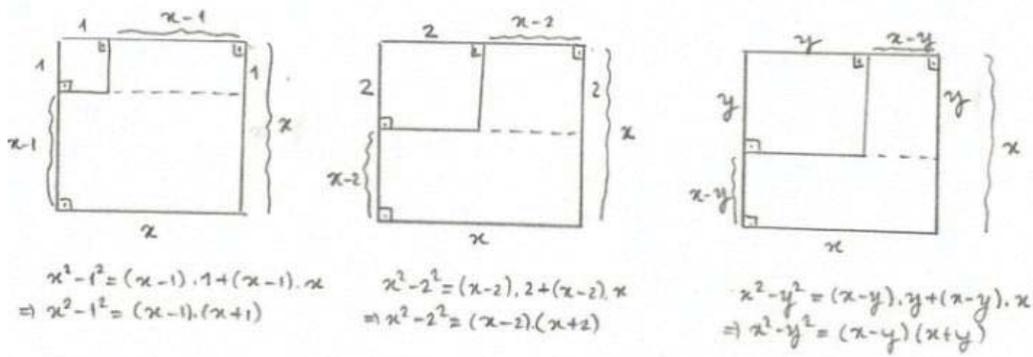


Figure-5. 29th Pre-service Teacher's Description.

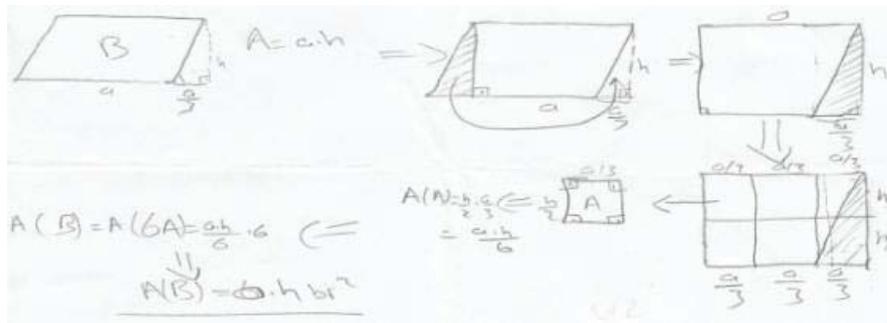


Figure-6. 28th Pre-service Teacher's Description.

The example of the pre-service teacher who performed the application but analyzed it inaccurately is as follows. This example was considered to be similar to the activity example given to enable coordination in the application process. Here the participant tried to develop a similar activity example, and tried to explain the process differently from the other participant but analyzed it falsely. When the example was examined, it was observed that it was not an accurate idea to try to calculate the area of the rectangle again by using the area of the previous rectangle. Moreover, the cases such as trying to obtain unit rectangles by dividing the height as $h/2$ and the edge of the triangle as $a/3$ and not being able to conclude a generalization are examples of the inaccurate analysis throughout the process. "While finding the area of a parallelogram, its base is multiplied by its height. Instead of giving this directly as a formula, we can make students find it by themselves. For this, we can consider our figure as a rectangle by having perpendicularities on the bases and then by carrying the triangle which is formed on the other side. Later, we can calculate firstly the area of the rectangle and then the area of the parallelogram by dividing the area of this rectangle into 'unit rectangles' and by using of the areas of these rectangle. For instance, if we name the base of parallelogram as 'a' and the perpendicular segment as 'h', then the base of triangle is $a/3$. If the edges of

rectangle are divided into pieces as $a/3$ and $h/2$, the rectangle is formed from unit rectangles whose areas are $\frac{h}{2} \cdot \frac{a}{3} = \frac{a.h}{6}$. Therefore, the area of rectangle becomes $a.h$ from $6 \cdot \frac{a.h}{6}$ which shows us the area of parallelogram" (28th pre-service teacher) (Figure 6).

Reflection

Construction synthesis

Fourth question was asked to pre-service teachers in order to thoroughly see how they would use discovery learning in mathematical education. It was aimed to see how they collect this information in a different manner, and bring about that information as a whole with the help of associations beyond the theoretical and practical knowledge they had. For that reason, they were asked to prepare a different and new activity in which they would use discovery learning. When the activities they prepared were examined, it was observed that 5 participants (13.5%) created an activity that was new or unfamiliar to discovery learning approach, 4 participants (10.8%) designed a new or unfamiliar activity, and 5 participants (13.5%) inaccurately or deficiently designed a new or

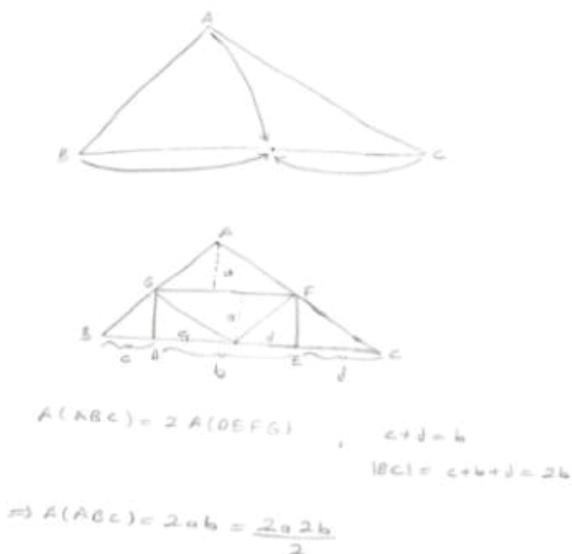


Figure-7. 36th Pre-service Teacher's Description.

unfamiliar activity. The other 23 participants (62.2%) neither answered the question nor prepared an activity. An example from the category of participants who created a new or unfamiliar activity is as follows:

"We draw a triangle and then cut it. Corners of triangle belonging to any base and the other opposite vertex of triangle are folded by combining them in a common point on the base. By this way, we obtain a rectangle. After that, we realize that the area of the triangle is double the area of the rectangle by asking them to link the whole area of the triangle with this rectangle. Later, we ask them to link it with the edges of the triangle and rectangle. In other words, we see that it is $A(ABC)=2.A(DEFG)=2.a.b$. Moreover, since c plus d equals to b , we can say that the base is $2b$ and the height of triangle is $2a$ by looking at $|BC|=b+c+d=2b$ equality. Thus, as a result of $A(ABC)=2.a.b$ equality which is recognized from the area of rectangle and linking of base ($2b$) and height ($2a$), ($2.a.b = 2a.2b/2$), they can conclude the generalization that the area of a triangle is one-half of multiplication of one of its bases with the height belonging to this base" (36th pre-service teacher) (Figure 7).

An example quotation of the pre-service teachers who designed a new or unfamiliar activity is as follows:

"We can enable students to achieve a general principle by providing them with different repeating decimals in different forms and asking them to get rid of the repeating parts of these decimals and bring the decimals into the rational shape. For instance, we ask them what we can do to get rid of the repeating part of $2.\bar{3}$. We make the students realize that we can multiply this decimal by 10 and save it from its repeating part by subtracting the

decimal from this result since the repeating part of the decimal is made up of a number. In other words, for instance, if our decimal is $x=2.\bar{3}$ then in that case it is $10x=23.\bar{3}$ and as a result $x=\frac{23-2}{9}$ is obtained.

For a different case, we ask them how to get rid of the repeating part of $2.\bar{34}$ and this time, we expect them to realize that it is necessary to multiply the decimal by 100. Thus, if our decimal is $x=2.\bar{34}$ it becomes $100x=234.\bar{34}$ and, we obtain $x=\frac{234-2}{99}$ from here.

We ask them what we can do for $2.\bar{13}$ again for a different case. Here, we expect them to realize that although the repeating part is again made up of a number, the previous number does not repeat, thus, we must multiply the decimal by both 100 and 10 and subtract it from them in order to get rid of the repeating part. That is to say, if our decimal is $x=2.\bar{13}$, then it is possible to claim that $100x=213.\bar{3}$ and $10x=21.\bar{3}$ and $x=\frac{213-21}{90}$ is obtained as a result. .

For another sample case, we can examine $2.\bar{134}$ decimal. From the same point of view, if the decimal is multiplied firstly by 1000, then by 10 and if it is subtracted from them and if we name the decimal as $x=2.\bar{134}$ then we can say that $1000x=2134.\bar{34}$ and $10x=21.\bar{34}$ and $x=\frac{2134-21}{990}$ is obtained as a result. .

If needed, it is possible to give the students more examples and ask them to achieve a generalization which covers all cases. Thereby, so as to write repeating decimals rationally, considering the repeating part as a single number, the rule of whole number – the part which does not repeat (after comma) 9 in the amount of the number which repeats and 0 in the amount of the number which does not repeat can be obtained" (34th pre-service teacher).

Two examples quotations belonging to the participants who designed a deficient or inaccurate activity are as follows:

"Firstly, we ask students about the solutions to various equations with reference to their previous knowledge. For instance, they are asked to solve $x^2+2x+1=0$ equation. From $(x+1)^2=0$ equation, we find $x=-1$ value. Next, for example, we ask them to solve $x^2-4x-5=0$ equation. We calculate the $x=-1$ and $x=5$ values from $(x+1)(x-5)=0$ equation. We give them a few similar examples. Later, we ask them to solve $x^2+1=0$ equation. In this example, it is stated that there is not any real number which enables the solution of $x^2=-1$ equation, furthermore, square of any real number is not equal to a negative number and then 'i' number is defined. Thus, the students realize the fact that the solution set to this

problem consists of ‘-i’ and ‘i’ numbers” (18th pre-service teacher).

“The students know $\cos(a+b) = \cos a \cdot \cos b - \sin a \cdot \sin b$.

Here we expect them to assume $a=b$ and as a result they can calculate $\cos 2a = \cos^2 a - \sin^2 a \dots$ (1) equation from $\cos(a+a) = \cos a \cdot \cos a - \sin a \cdot \sin a$ equation.

If we continue, we ask them to add and subtract $\sin^2 a$ value to the right side and here, they find $\cos 2a = 1 - 2\sin^2 a \dots$ (2) equation from

$\cos 2a = \cos^2 a - \sin^2 a + \sin^2 a - \sin^2 a = \cos^2 a + \sin^2 a - 2\sin^2 a$ equation. Then, we ask them to add and subtract

$\cos^2 a$ equality to the right side in (1) equation and they find $\cos 2a = 2\cos^2 a - 1 \dots$ (3) equation from

$\cos 2a = \cos^2 a - \sin^2 a - \cos^2 a + \cos^2 a = 2\cos^2 a - (\sin^2 a + \cos^2 a)$ equation. Thereby, they obtain three different equations in order to calculate the value of $\cos 2a$ in the end” (12th pre-service teacher).

It is seen from the examples given that both of them discussed about defining in the first example and demonstrating in different equations in the second one instead of making the students discover and achieve a new concept (i number) or a new principle (trigonometrical formula). The creative thinking process can be described as bringing ideas or mental images together in order to create an original or appropriate solution to a problem or situation in a manner which was never applied before (Kilgour, 2006). In this process, the person forms a new idea by combining and reorganizing his/her available knowledge structure (Mumford et al., 1997). When we consider the process of designing an original activity by using discovery learning as a creative thinking, it can be said that the pre-service teachers’ creative thinking skills are rather weak, judging by the fact that the number of the ones who created such an activity is quite low. We can conclude from this situation that the synthesizing skills of the pre-service teachers about the approach in their minds are very weak. One of the phases of the combination process, which is considered to be the main elements of creative thinking, is generating an idea (Kilgour, 2006). It can be claimed that some pre-service teachers are at the phase of generating an idea given the fact that they can design an activity, even though they cannot create the process of preparing an original activity. Thus, these pre-service teachers can combine the knowledge structure in their minds. Finally, we can conclude from this situation that they have cognitive competence in synthesizing process.

Consolidation evaluation

In the study, the fourth question the pre-service teachers

were not only asked to prepare a new or different activity in which they would use the discovery learning approach; but also, evaluate the whole process the activities they prepared. Thereby, it was aimed to examine their evaluations about the whole process as well as their configurations about the process; and whether they passed on any judgments or not. It was observed from the pre-service teachers’ evaluations that only 1 (2.7%) of them reached an opinion about the approach and the others (97.3%) either did not evaluate at all or did not pass on any judgments from their evaluations. The following quotation belongs to the pre-service teacher who could pass on a judgment from her evaluation:

“Discovery learning is a kind of learning which gives the individual the opportunity to learn the information by constructing it. The individual obtains new information on his/her own by using the information he/she already has. For example, in the activity we prepared, the individual calculates the area of the triangle by using the area of the rectangle. If this type of learning is applied properly, the information obtained can be both more permanent and more meaningful. When compared to other learning approaches, it works in contrast with Ausubel’s meaningful verbal learning model. In meaningful verbal learning, flow direction of the information works from the whole to the pieces; and is teacher-centered, however, in discovery learning, it works from the pieces to the whole; and is student-centered. It resembles the individual’s getting puzzle pieces together to see the whole picture. In fact, as long as we know the pieces forming the information, we can teach several subjects through discovery learning and design a variety of activities. Moreover, I think if we design the information, which we plan to make the students obtain by discovering, as a problem; and adapt this into daily life, we can actually make a realistic mathematics education happen” (36th pre-service teacher).

Consolidated information enables the use of that type of information in various cases, in a proper and confident manner (Dreyfus and Tsamir, 2004). Evaluation process can be described as the process of consciously passing on judgments based on a clearly defined criterion (Granello, 2001). Therefore, if the information is consolidated, the evaluation of that information will be parallel to its consolidation. The fact that only one of the pre-service teachers passed on judgments about the general structure of the approach and its association with other approaches demonstrates that the pre-service teacher has consolidated information and cognitive competences on the evaluation level.

SUGGESTIONS

While traditional or didactic mathematical education requires creating a routine procedure, modeling a sample

problem, and later expects students to apply similar problems, reformist mathematical pedagogy requires designing assignments which expects students to rationalize the quantities, come up with their own strategies, and discuss their opinions (Stigler and Hiebert, 1999; Boaler and Humphreys, 2005). The most fundamental responsibility of the constructivist education knowing your students' mathematical knowledge and harmonizing the teaching methods related to the nature of mathematical knowledge (Steffe and Wiegel, 1992). Hence, the teacher plays an important role in the designing and application of the education. Within this context, it is of utmost importance that pre-service teachers start their service having both contextual and pedagogical skills. In this study, the cognitive skills of pre-service mathematics teachers in using the approaches in mathematical education, within the framework of constructivism, and how they structure the education in their minds were studied. Therefore, out of all approaches, discovery learning and the use of this approach in mathematical education are examined.

In this study, the pre-service teachers were firstly asked questions containing theoretical information about the approach and afterwards, they were asked to evaluate various activities and finally, they were expected to plan an activity which could be used in mathematical education. After the answers, the pre-service teachers had given and the works they had prepared were examined, it was observed that they generally had adequate information about the approach (94.6%), they were able to comprehend and explain this information rationally (91.9%), and they could partially apply an activity related to the approach (46%). These results indicate that the pre-service teachers are successful on 'reproduction-recognizing' level which can be referred as their knowledge and comprehension level. However, on the connection (building with) level, the pre-service teachers' success on application level decreased and on the analysis level, it diminished dramatically. Problems are not the application of mathematical knowledge and procedures but meaningful mathematical activities. Hence, teachers design this activity in order to see the students' level at learning and further improve it by guiding their rationalization (Lampert, 1990; 2001). When an activity, in which discovery learning approach is applied, is accepted as the related activity, it is seen that the pre-service students' success at problem solving (46%) and coordination (35.1%) processes on the application level declines, furthermore their skills at criticizing (21%) and dissection-comparing (10.8%) processes on the analysis level decreases. These results suggest that the pre-service teachers' success on the 'connection-building with' level which can be referred as application and analysis level dramatically declines. These results, which suggest that the level of success related to the comparisons about producing relations of the approach within itself and with other approaches is low, prove that

the reflections in the minds of the pre-service teachers do not occur as desired. Hiebert and Carpenter (1992), described understanding as 'correlating ideas, events or procedures' (p.67), furthermore, they mentioned that understanding occurs in two methods which are 'studying differences and similarities; and, specifying the relations in it'. These generated results comply with the mentioned ideas.

In the process of preparing an original activity, it was observed that the pre-service teachers' skills in planning the process greatly decrease (13.5%) and again their skills at designing the process also decline (10.8%). This situation suggests that the success of the pre-service teachers on the 'reflection-construction' level which can be referred as their synthesis level is very low. These results indicate that the pre-service teachers are insufficient at preparing environments suitable for the application of new approaches within the framework of constructivism when we consider Richards' (1991) opinions that the teacher is supposed to come up with assignments and projects which will promote students to ask questions, create problems, and setting objectives and also Bruner's (1961) opinions that students become active learners not by chance but by planning in which they are guided to research and investigate. Besides, unless the teacher has an environment whose objectives, plan, and problem are well developed, the student will not do or learn anything (Brousseau, 1987). The students will learn some other things that might contain close answers to the teacher's questions (Simon, 1995). The results, showing that the pre-service teachers' success at planning an original activity or an activity which they are familiar with was very low and also they carried out the process inaccurately and falsely, suggest that the students will learn incomplete information containing misconceptions and they also support the discussed ideas.

It was observed in the study that the pre-service teachers failed (%2.7) at dealing with the approach by evaluating it with other approaches, and this result demonstrates that they are insufficient on the reflection-consolidation level. There are various discussions on how much guidance should be given to the students in discovery learning. However, Mayer (2004) claims that the most preferred approach in learning is not pure discovery learning or minimalist guidance, but the guidance approach. Since constructivism suggests structures collected in the learners' brains, the teacher's duty is to provide the student with experiences that will guide him/her to start with the old information. Under the guidance of carefully conducted question asking, the student's thinking about structure or problem is planned in a such way that it will head towards the thinking of the teacher or researcher. What is special about these approaches is that the development of the ideas is sequential and linear; also it has steps and orbits planned by the researcher or teacher (Richards, 1991). In this

study, the pre-service teachers mentioned that guidance is the basis in the approach while providing the students with the planned information and specifically stressed that in their explanations. The reflections about the approach, which are formed in the minds of the pre-service teachers while they evaluate the in-class activities, comply with the idea of basing education upon on a counseling approach.

It was observed in the study that even though the pre-service teachers might theoretically know how they should apply the approach or evaluate the given activities about the approach, one of the reasons why they are insufficient at planning an activity is that they do not have contextual information about the nature of the knowledge which they are supposed to provide their students with. Thus, the pre-service teachers had a hard time organizing the information they would teach and could not prepare an environment suitable for association.

CONCLUSION

Considering the results obtained by the study, firstly, the pre-service teachers should have theoretical knowledge about the information which will enable association. In a sense, the pre-service teachers should figure out and accurately structure what the information is about and how it is obtained, in their minds. Moreover, the pre-service teachers should know the information from the pedagogic point of view, select the proper ways to transfer the information to the students, and prepare the learning environment according to the selected approach. That's why the pre-service teachers should be rationally provided with both contextual and pedagogic knowledge and with environments enabling them to associate these two types of knowledge and structure them in their minds.

Conflict of Interests

The author has not declared any conflict of interest.

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Full Length Research Paper

The difficulties of the bilingual social sciences teacher candidates in educational activities: A case of Agri Ibrahim Cecen University

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This study aims at determining the difficulties experienced by bilingual teacher candidates in education. The study has a qualitative design, semi-structured interview is used and data are obtained with content analysis method. The study group of the research includes 117 students studying at different classes in Agri Ibrahim Cecen University, Faculty of Education, and Department of Social Sciences Teaching in 2013-2014 academic year, fall semester. A tool developed by researchers, made of 13 open ended questions in order to determine the personal features and views of teacher candidates, is used as the data collection tool. Frequency, percentage and content analysis is used to analyze the obtained data. SPSS-18 package program is used to prepare the tables and in statistical analysis. This study showed that; bilingual Social Sciences teacher candidates experienced important problems especially in the first few years in their school life; they could not express themselves well in course subjects and this caused some personality problems; they could not learn Turkish efficiently which was necessary for them in education life; they wanted to have education in Turkish even though they had received education in native language; they could not properly communicate with friends who were from different regions and had the same native language; they had difficulty in communicating with both languages; they believed that they could have more a successful education life if their native language had been Turkish... etc.

Key words: Native language, bilingualism, social sciences teacher candidates, education.

INTRODUCTION

When individuals who have different native language live together because of some reasons, there have always been interactions between the languages they use. Developing of communication tools have increased the relations between languages; on the other hand developing a language other than native language increased besides the increase in bilingualism (Tuncel and Aytan,

2013; Alkaya, 2007).

While native language is defined as “a language that reproduce other languages or dialects” (Turkish Language Association [TDK], 2014), the term of native language that is used widely today means (as mentioned in grammar terms vocabulary) “the language learnt by an individual from the society he was born in and raised,

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from the society with which he is connected in terms of ancestry; the language which is engraved in his subconscious and forms the strongest connection between individuals and society" (Korkmaz, 1992). Sagir (2007) states that the definition of the term of mother tongue in Turkish vocabularies –linguistics and grammar terms vocabularies- should be given separately as: "*the language that is spoken during pre-school, at home, in the neighborhood, in the village mostly with dialects, in situations when the language of mother and the main language used in society are the same or not*"

Bilingualism is defined in minimalist approach as; having at least one of the abilities of reading-writing, speaking, understanding at a minimum level in a language different from the native. The term is defined in maximalist approach as; being able to use two different languages at native language level (Baker, 2001), or contact of two different languages with one another in various ways (Diebold, 1961), or the ability to use more than one language or dialect in daily life (Grosjean, 1999).

Demirel (2002) stated that children firstly learn native language through hearing and experience; the language learnt from mother-father and immediate environment is coherent with the main rules of language. Children obey the rules, which are used differently in different regions, without noticing, and children acquire the ability to use this language according to the rules, again without noticing. Generally, it is accepted that basic language abilities are acquired until 5-6 while better and more professional language abilities are acquired and developed after 5-6 and continues until the age of 10 (Demir and Yapici, 2007). Language is one of the most significant communication tools and one of the most essential basic components of education.

Teacher, the most basic element of education gives education through language, which is another significant element. Communication can be generally defined as a dynamic process in which people transfer their emotions and thoughts through specific codes and symbols, to other people or their environment with or without a cultural unity (Yalcin and Sengul, 2007). Efficiency of the established communication determines the formation and quality of learning (Sever, 2004). People perceive outer world through various concepts and symbols and transfer this to others through language. Having a healthy communication is only possible when the language is used correctly and efficiently. This is why, sufficiency in language is very important both for the teacher, conveying the information and student, obtaining it. The study is significant as it is one of the first studies in the related literature.

We observed that the students of Social Sciences Teaching department, who were students yesterday, and are teacher candidates today, have some problems in communicating and expressing themselves in and out of class environments. We are inspired of the idea that this may have resulted from bilingualism. This is why social

sciences teacher candidates were asked to state the difficulties they experience in their education life.

METHODS

The research is prepared with qualitative research design, semi-structured interview is used and data are obtained with content analysis method. Random sampling is used; all staff have equal chance in the study group. Frequency, percentage and content analysis are used to analyze the obtained data. Content analysis is a descriptive approach that analyzes the social reality through classifying, categorizing, digitizing and making inferences about the message in verbal, written or other kinds of materials in terms of meaning and grammar (Buyukozturk et al., 2008). The study group of the research includes 117 students studying at different classes in Agri Ibrahim Cecen University, Faculty of Education, Department of Social Sciences Teaching in 2013-2014 academic term, fall semester.

Data collection tool

Data of the research were obtained by the data collection tool prepared by the researcher; the tool included 12 open-ended questions prepared by literature review and on the basis of expert opinions and 6 questions including personal information about students. After the related literature was reviewed, a draft including 13 questions was prepared. After combining some similar articles in the draft and taking experts' opinions, the number of questions was 12. Pilot scheme of this draft was completed. Teacher candidates were required to evaluate the draft, indicate the points they did not understand, and add what they think are necessary. According to the data obtained from pilot scheme, the draft was reorganized. This draft was presented for experts' opinion and data were collected. Frequency, percentage and content analysis were carried out in analyzing the data.

FINDINGS

Distribution of teacher candidates who participated in the research in terms of gender, grade, graduation, number of siblings and accommodation unit they were born in is presented in Table 1.

According to Table 1, 85 of teacher candidates are males (72.6%), 32 are females (27.4%). 58.1% are at 4th grade. The reason for this is to be able to determine the difficulties during license program better and more accurately. 0.5% of teacher candidates graduated from general high schools, 60% have 6 or more siblings. On the other hand, 56 (7.8%) of teacher candidates was born in village, 31 (26.4%) in district and 30 (25.6%) in city.

36 (30.77%) out of 117 teacher candidates in the research said that their native language is Turkish, 81 (69.23%) said that their native language is a language other than Turkish. 3 out of 81 candidates said that their native language is Arabic, 78 said that it is Kurdish. Data obtained from the answers of bilingual Social Sciences teacher candidates who said that their native language is a language other than Turkish are presented in Table 2.

Table 1. Distribution of teacher candidates in terms of gender, grade, graduation, number of siblings and accommodation unit they were born.

		F	%
Gender	Male	85	72.6
	Female	32	27.4
Grade	1	16	13.6
	2	15	12.8
	3	18	15.3
	4	68	58.1
Graduation	General High School	106	90.5
	Anatolian High School.	7	5.9
	İmam Hatip High School.	1	0.8
	Industrial Vocational High School.	1	0.8
Number of Siblings	1	3	2.5
	2	3	2.5
	3	12	10.2
	4	17	14.5
	5	11	9.4
	6 and over	71	60.6
Accommodation unit you were born	Village	56	47.8
	District	31	26.4
	City	30	25.6

Table 2. Answers of teacher candidates to the question, "At what age did you start learning Turkish?"

	F	Percentage
0-6 ages	20	24.7
6-10 ages	47	58.0
10-15 ages	12	14.08
I don't remember	1	1.02
I didn't learn	1	1.02

Findings obtained from open ended questions

Answers to the Question, "At what age did you start learning Turkish?"

According to Table 2, 20 of Social Sciences teacher candidates learnt Turkish between the age of (24.7%) 0 and 6; 47 between (58%) 6 and 10; 12 between (14.8%) 10 and 15. One of the students states that he did not remember and one stated that he did not learn. According to these findings, it can be said that most of the teacher candidates learnt Turkish during secondary school.

Answers to the Question "Which language do you use in your family?"

When Table 3 is analyzed, it can be seen that most of the Social Sciences Teacher Candidates used their native

language in their family. The number of people who use only Turkish in their family is 5 (6. 17%).

Answers to the question "Is there anybody in your family who does not know Turkish?"

According to Table 4, there are 52 teacher candidates who said 'yes' to the question (64.9%). 11 of these candidates said that their mothers do not know Turkish while 3 said that their grandmothers or grandfathers do not know Turkish. There are 29 teacher candidates who said 'no' to the question (35.8%).

Answers to the Question, "With which language do you feel comfortable?"

When Table 5 is analyzed, it is seen that 56 of teacher candidates (69.13%) expressed themselves more comfortably in their native language while 19 teachers (23.45%) said that they express themselves more comfortably in Turkish.

Answers to the Question, "Is there a teacher who knows your native language in your educational life? Does this have an effect on your success in lessons?"

According to Table 6, the number of teacher candidates

Table 3. Answers of teacher candidates to the question “Which language do you use in your family?”

	F	Percentage
Kurdish	63	77.77
Kurdish- Turkish	10	12.34
Kurdish	5	6.17
Arabic- Kurdish	1	1.23
Arabic- Kurdish	1	1.23
Arabic	1	1.23

Table 4. Answers of teacher candidates to the question “Is there anybody in your family who don't know Turkish?”

	F	Percentage
Yes	52	64.19
No	29	35.80

Table 5. Answers of teacher candidates to the question, “With which language do you feel comfortable?”

	Frequency	Percentage
Kurdish	55	67.90
Turkish	19	23.45
Arabic	1	1.23
Turkish and Zaza Language	3	3.70

who said ‘yes’ to the question is 65 (80.24%), number of teacher candidates who said ‘no’ is 16 (19.75%). 22 (33.8%) out of all teacher candidates who said that there were teachers who know their native language said that this did not affect their success in lessons very much; 6 (9.23%) said that it contributed to their success; 4 of them said that (6.15%) they learnt Turkish due to these teachers; 3 said that (4.61%) they feel that these teachers are closer; 2 said that (3.07%) they could communicate more comfortably with the teacher of that lesson.

Can you communicate with your friends who have the same native language but living in different regions?

When Table 7 is analyzed, it is seen that 66 of teacher candidates in the research (81.48%) said that they could communicate with friends living in different regions; 5 said that (6.17%) they could not communicate; 10 said

that (12.34%) they could partially communicate. A teacher who said ‘yes’ to this question stated that “*although we have some difficulty at the beginning because of the dialect, -such as Mardin, Şırnak- after a while it feels like we are speaking the same language*”. One of the teacher candidates who said ‘partially’ stated that “*we can communicate although we may have some problems and difficulties sometimes*.” Another teacher candidate said that “*we can communicate except some words*”.

“At which stage of your life did having a native language other than Turkish cause difficulties the most?”

When Table 8 is analyzed, it can be seen that 47 (58.02%) of candidates stated that they had difficulty in primary school period, 8 (9.87%) in all of the educational life.

“Do you think that you could learn academic Turkish efficiently, which is necessary in your educational life? Can you also sufficiently benefit from other Turkish curriculum lessons?”

When Table 9 is analyzed, it can be seen that 33 of teacher candidates in the study (40.74%) said that they could learn Turkish efficiently; but 13 of these teacher candidates (39.39%) said that they could not benefit from other Turkish lessons sufficiently. 48 teacher candidates (59.25%) said that they could not learn Turkish efficiently; 35 (72.92%) of these teacher candidates said that they could not sufficiently benefit from other Turkish curriculum lessons.

“If you had had education in your native language, would you also want to have education in Turkish too?”

When Table 10 is analyzed, it can be seen that 72 of teacher candidates (88.89%) said that they want to have Turkish education too, while 8 of teacher candidates said that (9.87%) they do not want to have Turkish education.

According to you, what kind of positive and negative results will you face in future because of having education only in native language?

According to Table 11, teacher candidates mentioned that they will face negative results such as not being able to express oneself and losing self-confidence (f=12), not being successful (f=6), having problems in government agencies (f=2) besides positive results such as continuing cultural values (f=4), preventing disappearance of native language (f=2), developing academically and scientifically

Table 6. Answers of teacher candidates to the question, "Is there a teacher who knows your native language in your educational life? Does this have an effect on your success in lessons?"

	Frequency	Percentage		F	Percentage
Yes	65	80.24	Didn't affect success in classes very much	22	33.8
			Feel that these teachers are closer	3	4.61
			Contributed to my success	6	9.3
			I learnt Turkish thanks to these teachers	4	6.15
			I could communicate more comfortably with the teacher of that lesson	2	3.07
No	16	19.75			

Table 7. Answers to the question, "Can you communicate with your friends who have the same native language but living in different regions?"

	F	Percentage
Yes	66	81.48
No	5	6.17
Partially	10	12.34

Table 8. Answers to the question "At which stage of your life did having a native language other than Turkish cause difficulties the most?"

	F	Percentage
Preschool period	1	1.23
Primary school	47	58.02
Secondary School	2	2.46
University	2	2.46
In Government agencies	3	3.70
Turkish lesson	1	1.23
All of my educational Life	8	9.87

(f=1).

Answers to the question of "Can you translate the below mentioned sentences to your native language?"

"Çaldıran Muharebesi had significant effects in East. Diyarbakır was wretched. It was languished as it had been besieging for a year."

33 (40.74%) teacher candidates could not answer the question. 16 teacher candidates (19.75%) could only translate the second sentence; 32 teacher candidates (39.50%) tried to translate the sentences. But there were no literal translations.

Please write down the positive and negative effects of having a native language other than Turkish during your entire educational life and write down any issues you want.

According to Table 12, most of the teacher candidates (f=27) think that their failure in education resulted from having education in second language. One of the teacher candidates stated that *"during my primary and secondary education, I was trying to learn Turkish, not lessons. But my friends were learning lessons instead of a language. This caused a gap between us. This is why, I always fell behind them"*. Another teacher candidate said that *"I was dispirited"* because of these kinds of reasons.

Again, some of the teacher candidates mentioned that they failed in interpretation questions in exams. Another teacher candidate said that *"I had difficulty in expressing myself in Turkish. I was beaten because of this"*. Two teacher candidates said that *"I was excluded by some teachers as I was speaking in my native language"*. Another teacher candidate said that *"I couldn't explain what I know exactly in my educational life, I couldn't socialize and I became a withdrawn person"*.

In this stage, some teacher candidates emphasized the importance of knowing two languages (f=7) and said that *"Knowing one language is like being one person, knowing two languages is like being two people."* On this issue, a teacher candidate said that *"Although it affected me negatively during my primary education, I enjoyed knowing two languages later"*.

RESULT AND DISCUSSION

According to the data obtained from the research, bilingual Social Sciences teacher candidates stated that they meet with many difficulties in their education lives; this is why, they have the biggest problems in their primary education level. During this period, and in the following years, they had difficulty in understanding courses, they failed in exams, they had difficulty especially in interpretation questions, they could not

Table 9. Answers to the question “Do you think that you could learn academic Turkish efficiently, which is necessary in your educational life? Can you also sufficiently benefit from other Turkish curriculum lessons?”

	F	Percentage		F	Percentage
Yes	33	40.74	I can also sufficiently benefit from other Turkish curriculum lessons	20	60.60
			I can't sufficiently benefit from other Turkish curriculum lessons	13	39.39
No	48	59.25	I can also sufficiently benefit from other Turkish curriculum lessons	13	27.08
			I can't sufficiently benefit from other Turkish curriculum lessons	35	72.92

Table 10. Answers to the question “If you had education in your native language, would you also want to have education in Turkish too?”

	F	Percentage
Yes	72	88.89
No	8	9.87

Table 11. Answers to the question, ‘According to you, what kind of positive and negative results will you face in future because of having education only in native language?’

Theme	F
1 Not being able to express oneself and loss of self-confidence	12
2 Not being successful	6
3 Having problems in government agencies	2
4 Continuing cultural values	4
5 Preventing disappearance of native language	2
6 Developing academically and scientifically	1

express what they know during lessons, and they were exposed to violence by teachers because of this. On the other hand, they mentioned that as they are bilingual, they had language conflict; they used to use Turkish words while speaking in native language, they used to think in native language and had difficulty in expressing these thoughts in Turkish and they could learn neither of the languages completely. Almost half of the teacher candidates in the research stated that they could not learn Turkish efficiently; this is why they could not benefit from the courses in Turkish curriculum sufficiently.

In the research of Achmet (2005), he evaluated the skills of students, studying in the school of minorities that give bilingual education in Greece, in terms of reading comprehension and written expression. In this research, it was determined that bilingual students who graduated from the school of minorities and continue education in secondary school (native language Turkish, second language Greek) were under the expected average in terms of both Turkish and Greek reading comprehension

and written expression skills. This result is in parallel with the result of our study.

In the studies by Karatzias et al. (2001) and Diaz-Rico and Smith (1994), it was seen that students' positive thoughts and attitudes towards school are significant in terms of their satisfaction level. So, it can be said that problems of bilingual students in schools are worth researching.

In our study, the teacher candidates stated that they could not express themselves, they lost self-confidence, they could not establish communication and they sometimes felt humiliated as they were bilingual.

Studies in the related literature show that bilingual students' school life quality and their sense of belonging are damaged. In the study by Alaca (2011) in Adiyaman, on the issue of “relation between life quality perception and sense of belonging to school in bilingual and non-bilingual students”, it was determined that the sense of belonging to school, feelings about school and statue sub-dimensions were meaningfully in favor of students whose native language is Turkish. On the other hand, in the same study, it was seen that student-student communication and school management sub-dimensions were meaningfully in favor of bilingual students. In his study, Akyol (2009) stated that because of the differences in grammatical structures of language, individuals have problems in establishing communication and they were under the effect of their native language in terms of the use of subject and negation. It is seen that similar results were obtained in our study.

When Social Sciences teacher candidates in the study were required to translate some sentences into their native language, almost 60% of them could not translate. This shows that teacher candidates' control in their native language is weak. Besides that, they mentioned that they had difficulty in expressing what they think in Turkish especially in schools, government agencies and in social life. In his study, Mergen (2010) analyzed the grammatical and semantic processes of bilingual individuals, whose native language is Turkish, second language is English, in terms of neurolinguistics.

Students were required to determine the grammatical and semantic mistakes in scope of the evaluation scale which was given to them. Duration needed by the subjects and correctness of answers were recorded and statistical

Table 12. Answers to the question, "Please write down the positive and negative effects of having a native language other than Turkish during your entire educational life and write down any issues you want."

	Theme	F
1	I was unsuccessful in lessons, exams, in my educational life.	27
2	I couldn't express myself clearly, I couldn't communicate with others, I lost my self-confidence, I wasn't comfortable in society.	17
3	Knowing one language is like being one person, knowing two languages is like being two people. Knowing two languages is nice.	6
4	I was insufficient in my native language.	3
5	There is language chaos. I have to use Turkish words while speaking in my native language.	1
6	I couldn't learn native language or Turkish completely as I learnt Turkish later.	1
7	Having education in a different language have triggered negative thoughts all of my life, this is why I am not content with my life.	1
8	As official language is Turkish in our country, I have problems in expressing myself in all of the government agencies.	1
9	I couldn't have academic or scientific mental development in neither my native language nor Turkish.	1
10	As Kurdish words are uttered differently, I cannot speak politely in Turkish.	1

evaluation was done. The obtained results showed that there was not a meaningful difference between grammatical and semantic response time in second language, but there was significant difference in terms of correct answers. Difference in the response time of bilingual individuals support the data obtained in this study.

In the study by Tuncel and Aytan (2013), visual literacy and written expression skills of teacher candidates studying at a university in Greece, in Greek language were evaluated. The results of this study are also in parallel with the results of our study. Namely, it was determined that bilingual teacher candidates had difficulties in writing Turkish words and they frequently made mistakes.

Suggestions

1. The study can be carried out with wider samples, in a multidisciplinary method with linguists.
2. Including other branches in the study can be significant in terms of obtaining various opinions on the issue.

Conflict of Interests

The author has not declared any conflict of interests.

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