



AN EVALUATION OF PRE-SERVICE TURKISH TEACHERS' LATERAL THINKING DISPOSITIONS WITH REGARD TO DIFFERENT VARIABLES

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Abstract:

The purpose of this study is to investigate the pre-service Turkish teachers' lateral thinking dispositions with regard to different variables. The research is a descriptive study which was structured according to the correlational survey model. The sample of the study consists of a total of 197 pre-service teachers studying in the Faculty of Education in Tokat Gaziosmanpaşa University in 2018-2019 academic year. The Lateral Thinking Disposition scale (LATD) developed by Semerci (2016) was used in the study. The data obtained were analyzed via SPSS 22 Windows software. Considering the results of the study, it was concluded that the total scores of the pre-service teachers from the LATD scale were in favour of the male students considering gender and the students graduating from the foreign language high schools in terms of the school from being graduated.

Keywords: Pre-service Turkish teachers, lateral thinking, Lateral Thinking Scale

1. Introduction

The world has been changing rapidly. The field of education has been directly affected with this process and the mission of education has changed in the 21st century. Thus, the educational institutions redesign the curricula in the 21st century and make an attempt to train individuals who are able to cope with the problems of the future instead of mass education. In other words, the main purpose of education today is to train individuals who acquire skills and competence. In this respect, the new generation needs talent which will make contributions to them to gain behaviour and skills. Creative thinking has an important place among these skills, which are also called as

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the 21st century skills. "Creative thinking" is also called as the "lateral thinking" which complements and develops critical thinking (MEB, 2016: 3).

Lateral thinking, a systematic way of thinking, was developed by Edward de Bono. De Bono in his book called "New think: The use of lateral thinking in the generation of new ideas" (1967) used the concept of thinking. In lateral thinking theory, "*the person must distance oneself from standard and current thinking patterns and think the unthinkable*". According to De Bono, "*the creativity of a person who finds oneself in an inconceivable situation can reach solution by thinking the unthinkable*" (Teixeira, 2013: 16). Lateral thinking is only concerned with the perception part of thinking and refuses to play with the existing pieces. Hence, the external world is organized into pieces and the solution is sought. In other words, the purpose is to generate new patterns of thought by removing stereotypical patterns of thought (Çetiner, 2013).

De Bono designs the theory with the concepts of vertical and horizontal thinking he developed. According to this theory, the important thing in vertical thinking is to dig the existing hole deeper as far as possible for the solution of a problem. In horizontal thinking, the important thing is to dig new holes and thus generating new alternatives as long as possible for the solution of a problem. It is nearly impossible to come across vertical thinking in the works of creative people as they have horizontal thinking. These people solve the problems by using their own ideas and techniques. The fundamentals of these ideas and techniques are that "*they are constructed with the idea of relying on person's own perceptions and instincts*" (Suojanen and Brooke, 1971; as cited in Saraçoğlu, Duran and Taşkın, 2010: 4).

"The individuals who think laterally primarily change their viewpoints. They can eliminate stereotypical and routine patterns and judgments and they can introduce more practical, useful, and economical solutions in place of existing methods and solutions" (MEB, 2016: 3). With this aspect, "*lateral thinking introduces deliberate, systematic process that will result in innovative thinking. They teach idea-generating tools that will produce solutions for unusual problems and fields open to development*" (Lawrence and Xavier, 2013: 29). Thus, it is very important to promote the lateral thinking skills in learning-teaching processes. Therefore, "*the students must be encouraged and supported to generate ideas, methods, and reasons which contradict and conflict with reason and ideas because lateral thinking is required for creative thinking. In lateral thinking there are dominant opinions and reasoning that contradict with current and routine thinking patterns and methods*" (Sönmez, 1993: 150).

Although lateral thinking is very powerful at very younger ages, due to rote-learning, it is a skill that is becoming blunt (Çetiner, 2013) as rote learning kills students' individuality, restricts original thought, and prevents the evaluation of new data that is not compatible with the conventional thought pattern (Özden, 1998). However, the educational processes in the 21st century have the following perspectives for the training of individuals who are creative, think critically, collaborate with others, have problem-solving and excellent communication skills, know how to reach the necessary knowledge, use technology while reaching knowledge, are open to new ideas, are flexible and compatible, know their responsibilities, are self-managed and take initiative, have developed social and cultural skills, are productive and have leadership

skills (Uluyol and Eryılmaz, 2015). Turkish course and Turkish teachers are significant for the education to fulfil this function.

As a course of mother tongue language in education, Turkish is based on comprehension and narrative skills. A student can perform a series of thinking and expressing activities like learning, applying what is learned, and interpreting with these skills (MEB, 2006). With this aspect, Turkish education becomes an activity which activates thinking processes. This interaction trains students about thinking in education. Thus, students must be supported to acquire different perspectives, develop problem solving skills, and think flexibly and alternatively. Lateral thinking system is quite functional to reach this purpose. The pre-service teachers who aim at introducing narrative richness of Turkish to students and having them acquire the skill of using Turkish accurately, effectively, and beautifully must consider this situation and design the learning environment, accordingly. Hence, *“it is possible to enhance creativity with knowledge and produce more value by using the lateral thinking techniques”* in Turkish courses (Polat and Koç, 2007: 25).

It is known that there are studies about the relationship between lateral thinking, management, and trade (Butler, 2010, De Bono, 1971; Millar and Taylor, 1995). There are also some studies encountered in the field of education (Lawrence and Xavier, 2013; Waks, 1997).

Considering the studies carried out in literature, the studies related to lateral thinking are quite limited (Gencel, 2018; Semerci, 2016; Semerci, 2017). In the surveys carried out, it was revealed that Semerci (2016) developed a scale for lateral thinking and Semerci (2017) identified the pedagogical formation students' lateral thinking dispositions using this scale. Gencel (2018) aimed at determining pre-service elementary school teachers' lateral thinking dispositions. On the contrary, there were not any studies carried out about pre-service Turkish students' lateral thinking skills in literature.

Turkish course makes contribution to the lateral thinking training process. This course provides opportunities for students to gain different viewpoints, solve problems by expressing themselves freely, and introduce original ideas. Thus, it is important that pre-service Turkish teachers raise awareness and consciousness about lateral thinking skills. This understanding will enable students to use different teaching methods and techniques about lateral thinking. Thus, pre-service teachers might be able to gain competence about individual and pre-service development. Semerci (2017) determined in the recommendation section of his study that the lateral thinking dispositions of pre-service teachers especially studying in the faculties of education must be determined. It was thought that the study must be carried out with the students studying in different departments in line with this opinion. Thus, the examination of pre-service Turkish teachers' lateral thinking dispositions is important and required. This research aimed at determining pre-service Turkish teachers' lateral thinking dispositions with regard to different variables. The study sought to answer the following research questions:

1. What are the pre-service Turkish teachers' lateral thinking dispositions?

2. Do the pre-service Turkish teachers' lateral thinking dispositions differ according to the variable of "gender"?
3. Do the pre-service Turkish teachers' lateral thinking dispositions differ according to the variable of "type of high school graduation"?
4. Do the pre-service Turkish teachers' lateral thinking dispositions differ according to the variable of "the number of the books read"?
5. Do the pre-service Turkish teachers' lateral thinking dispositions differ according to the variable of "the use of the Internet"?

2. Method

2.1. The Research Model

This research is a descriptive study and it is structured according to the correlational survey model. This model *"involves looking at relationships between two or more variables and aims at determining the extent to which the variables are related or change"* (Karasar, 2014: 81). The correlational survey model was used in the research to determine the relationship between lateral thinking and some variables (gender, grade, type of high school graduation, the average number of books read per year, and the use of the Internet).

2.2. The Sample of the Study

The research using convenient sampling method was carried out with a total of 197 pre-service teachers studying in the 1st, 2nd, 3rd, and 4th grades in the department of Turkish Language Teaching in Tokat Gaziosmanpaşa University. The demographic information about the pre-service teachers was presented below.

Table 1: Demographic characteristics of pre-service teachers

Demographic characteristics	Groups	Frequency	%
Gender	Female	137	69.5
	Male	60	30.5
	Total	197	100
Grade	1	47	23.85
	2	48	24.36
	3	47	23.85
	4	55	27.91
	Total	197	100

2.3. Data Collection Tools

The data collection tool in the research consists of two dimensions. The first dimension involves the "Personal Information Form" prepared by the researcher. The form included the questions which could reveal the relationship between the pre-service teachers' lateral thinking dispositions and gender, grade, type of high school graduation, the average number of books read per year, and the use of the Internet. The second dimension of the data collection tool included the "Lateral Thinking Disposition

Scale "(LATD) which was developed by Semerci (2016) and whose validity and reliability was obtained. LATD scale is a one dimensional and 9 item scale. The assessment of 5 point Likert type scale is "strongly disagree (1), mostly disagree (2), partly agree (3), mostly agree (4), strongly agree (5)". There are not any reverse scored items in the scale. The scale's Cronbach Alpha coefficient is 0.754.

2.4. Data Analysis

The findings obtained via LATD scale were assessed with descriptive statistical methods including mean, standard deviation, t-test, and ANOVA.

3. Findings

The findings obtained as a result of the analysis in the study and which aimed at determining the pre-service Turkish teachers' lateral thinking dispositions were presented below.

Table 2: t-Test Results of Pre-Service Turkish Teachers' Lateral Thinking Dispositions with regard to Gender Variable

Gender	N	(\bar{X})	ss	Sd	t	p
Female	137	3,59	4,46	195	-1,883	,061
Male	60	3,74	4,92			

p<,05

According to the Table 2, it was determined that the pre-service male teachers' LATD total scores were (\bar{X} =3,74) and the pre-service female teachers' LATD total scores were (\bar{X} =3,59). Although the pre-service male teachers' LATD total scores were higher than the females' scores, it was determined that there was not a significant difference [$t_{(195)}=-1,883, p>0.05$].

Table 3: ANOVA Results of Pre-Service Turkish Teachers' Lateral Thinking Dispositions with regard to Grade Variable

The source of variance	Sum of squares	Sd	Mean of squares	F	p
Intergroup	39,9	3	13,3	,615	,606
Intragroup	4183,6	193	21,6		
Total	4223,6	196			

p<,05

According to Table 3, there is not a significant difference between the pre-service Turkish teachers' LATD scores and the variable of grade ($F=,615; p>0.05$).

Table 4: ANOVA Results of Pre-Service Turkish Teachers' Lateral Thinking Dispositions with regard to the High Schools Graduation

The source of variance	Sum of squares	Sd	Mean of squares	F	p
Intergroup	124,9	5	24,9	1,165	,328
Intragroup	4098,6	191	21,4		
Total	4223,6	196			

p< ,05

Considering Table 4, there is not a significant difference between the pre-service Turkish teachers' LATD scores and the variable of high school graduation (F=1,165; p>0.05).

The graduates of Foreign Language School statistically have the highest level of lateral thinking (\bar{X} =4,22) among the high schools the students graduated. The graduates of Science School have the lowest level of lateral thinking (\bar{X} =3,62).

Table 5: ANOVA Results of Pre-Service Turkish Teachers' Lateral Thinking Dispositions with regard to the Number of Books Read

The source of variance	Sum of squares	Sd	Mean of squares	F	p
Intergroup	48,0	4	12,0	,552	,698
Intragroup	4175,5	192	21,7		
Total	4223,6	196			

p< ,05

According to Table 5, there is not a significant difference between the pre-service Turkish teachers' LATD scores and the variable of the average number of books read per year, (F=,552; p>0.05).

Table 6: ANOVA Results of Pre-Service Turkish Teachers' Lateral Thinking Dispositions with regard to Internet Use Frequency

The source of variance	Sum of squares	Sd	Mean of squares	F	p
Intergroup	47,757	4	11,9	,549	,700
Intragroup	4175,857	192	21,7		
Total	4223,614	196			

p< ,05

Considering Table 6, there is not a significant difference between the pre-service Turkish teachers' LATD scores and the variable of Internet use frequency (F=,548; p>0.05). It is found that the pre-service teachers who use the Internet for 16 hours and more statistically think less laterally (\bar{X} =3,22).

4. Results and Discussion

The study aimed at determining the pre-service Turkish teachers' lateral thinking dispositions and examining them with regard to "gender", "grade", "type of high school graduation", "the number of books read", "the use of the Internet". Considering

the findings, although there was not a significant difference between the pre-service Turkish teachers' lateral thinking dispositions and the gender variable, it is possible to state that when compared to the pre-service female teachers, the pre-service male teachers thought more laterally. Similar results were obtained with the previous studies (Lawrence and Xavier, 2013; Semerci, 2017).

The study investigated the relationship between the pre-service Turkish teachers' lateral thinking dispositions and the grade level variable. According to the findings, it was revealed that there was not a significant difference between the pre-service teachers' lateral thinking dispositions and the grade. Therefore, the increase in the grade level does not have a determining effect on lateral thinking.

Another result obtained in the study is that there was not a significant difference between the lateral thinking dispositions and the high school which pre-service teachers graduated from. In addition, it was found that the pre-service teachers graduating from foreign language high schools had higher lateral thinking scores. *"Each vocabulary the student learns, any sentence he understands, and any text he solves in a foreign language he learns cause the student to produce new ideas and ask questions about the foreign culture"* (Bağçeci and Yaşar, 2007: 10). Thus, learning a language develops lateral thinking skill. In this context, it can be stated that the pre-service teachers graduating from the foreign language school think more laterally.

Within the context of the study, another result obtained in the study is that there was not a significant difference between the pre-service teachers' lateral thinking dispositions and the average number of books read per year. Contrary to this condition, Gencil (2018) identified that the pre-service elementary school teachers who had reading habit had higher lateral thinking dispositions. It can be claimed that this result is due to the pre-service teachers' low rate of reading habit because reading activates thinking skills. With this aspect, it causes an individual to approach human beings and humanitarian situations from different perspectives. Thus, there is need for creating reading programs which will enable to popularize the efforts to gain reading culture and make each pre-service teacher achieve universal literacy so that pre-service teachers can develop their lateral thinking skills.

When the findings were analyzed, it was determined that the variable of the frequency use of the Internet did not have an important effect on the pre-service Turkish teachers' lateral thinking dispositions. This result reveals that the frequency of the use of the Internet is not a factor that has an effect on the pre-service teachers' lateral thinking skills. Contrary to this, there are studies in literature which state that the pre-service teachers who use the Internet frequently have higher levels of lateral thinking (Gencil, 2018).

According to Duman (2015: 5), *"it is an ideal goal for the student to realize his own brain power and thus learning independent, critical, creative, constructive, and problem-solving learning."* In line with this goal, lateral thinking implementations which will enable the pre-service teachers to realize their own capacities and achieve learning at their own learning pace must be included in the learning-teaching processes.

The following recommendations can be made within the context of this study:

- It is suggested that the courses which develop lateral thinking should be included in Undergraduate Turkish Language Teaching curriculum.
- It is suggested that the pre-service Turkish teachers' awareness about the use of the Internet should be raised.

References

- Bağçeci, B., & Yaşar, M. (2007). Ortaöğretim Kurumlarında İngilizce Öğretimine İlişkin Öğrenci Görüşleri. *Gaziantep Üniversitesi Sosyal Bilimler Dergisi*, 6(1), 9-16.
- Butler, S.A. (2010). Solving business problems using a lateral thinking approach. *Management Decision*, 48(1), 58-64.
- Çetiner, G. (2013). Yanal Düşünme (Lateral Thinking). Retrieved November 22, 2018, from <https://www.endustrimuhendisligim.com/yanal-dusunme-lateral-thinking>.
- De Bono, E. (1967). *New think: The use of lateral thinking in the generation of new ideas*. New York: Basic.
- De Bono, E. (1971). *Lateral thinking in management*. New York: American Management Association
- Duman, B. (2015). *Neden Beyin Temelli Öğrenme? 4. Edit.* Ankara: Pegem Akademi.
- Gencil, İ.E. (2018). Sınıf öğretmeni adaylarının yanal Düşünme eğilimleri. VIII. Uluslararası Eğitimde Araştırmalar Kongresi, 9-10-11 May 2018, Manisa, Türkiye.
- Karasar, N. (2014). *Bilimsel Araştırma Yöntemi*. Ankara: Nobel Yayıncılık.
- Lawrence, A.S.A. & Xavier S.A. (2013). Lateral Thinking of Prospective Teachers. *Journal of Educational Reflection*, 1(1), 28-32.
- Millar, B.J., & Taylor, N.G. (1995). Lateral thinking: the management of missing upper lateral incisors. *British Dental Journal*, 179(3), 99-106.
- Millî Eğitim Bakanlığı [MEB], (2006). *İlköğretim Türkçe Dersi Öğretim Programı (6, 7, 8. Sınıflar)*, Ankara: Millî Eğitim Bakanlığı.
- Millî Eğitim Bakanlığı [MEB], (2016). *Düşünme Eğitimi Dersi Öğretim Programı (7-8. Sınıflar)*. Ankara: Millî Eğitim Bakanlığı.
- Özden, Y. (1998). *Öğrenme ve Öğretme*, 2.Baskı. Ankara: Pegem Akademi.
- Polat, A. & Koç, G. (2007). Sistematik inovasyon teknikleri İnovasyon haritası ve trend analizi. *Altı Sigma Forum*, 24-30.
- Saraçoğlu, M., Duran, C. & Taşkın, E. (2010). Girişimcilikte Yaratıcılığın Üç Boyutu: Birey, Süreç ve Ürün. *Anadolu Üniversitesi Sosyal Bilimler Dergisi*, 10(2), 1-14.
- Semerci, Ç. (2016). Developing a Lateral Thinking Disposition (Latd) Scale: A Validity and Reliability Study. *Journal of Theory and Practice in Education*, 12(1), 358-371.
- Semerci, N. (2017). Pedagogical Formation Students' Dispositions toward Lateral Thinking. *Bartın Üniversitesi Eğitim Fakültesi Dergisi*, 6(1), 336-345.
- Sönmez, V. (1993). Yaratıcı Okul, Öğretmen, Öğrenci. *Yaratıcılık ve Eğitim içinde*. (p. 144-157). Ankara: Türk Eğitim Derneği Yayınları.

- Teixeira, M.B.F. (2013). *Mimarlık ötesi tasarım paradigması*. (Doctoral Dissertation). İstanbul Teknik Üniversitesi Fen Bilimleri Enstitüsü, İstanbul.
- Uluyol, Ç., & Eryılmaz, S. (2015). 21. Yüzyıl Becerileri Işığında Fatih Projesi Değerlendirmesi. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi*, 35(2), 209-229.
- Waks, S. (1997). Lateral thinking and technology education. *Journal of Science Education and Technology*, 6(4), 245-255.

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