

Full Length Research Paper

The relation between prospective teachers' and their parents' learning styles

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The aim of this study is to investigate the relation between the learning styles of teacher candidates and those of their parents. Relational survey method has been employed to conduct the study. The target group contains 211 novice teachers studying at different teacher training departments of a Turkish university. The Grasha-Riechmann Student Learning Style Inventory and Kolb Learning Style Inventory have been administered to the participants and to their parents. The participants were asked to administer these scales to their parents. Inventories detected to be incomplete were eliminated, and consequently only 33 families' responses have been evaluated. The parents with a degree from a middle school or above have participated in the study. The data obtained from Kolb Learning Style Inventory suggest that there is no relation between the learning styles of teacher candidates and those of their parents. However, the data set from Grasha-Riechmann Student Learning Style Inventory displays a medium level relation between the learning styles of participating teacher candidates and that of their parents. Additionally, no statistically significant difference has been identified across the learning styles of participants in terms of their regional background and the educational background of their parents.

Key words: Learning styles, parents' learning styles, Kolb and Grasha-Riechmann learning style.

INTRODUCTION

Recent studies in learning psychology and educational sciences have yielded findings signifying the role of individual differences during teaching-learning process. Administered based on individual differences, instruction defines the quality of learning (Jonassen and Grabowski, 1993; Taylor, 2001; Bozkurt and Aydogdu, 2009; Dunn et al., 2009; Hsieh and Dwyer, 2009; Yazicilar and Guven, 2009; Meydan, 2010; Ari and Bayram, 2011; Yilmaz and Orhan, 2011) and contributes positively to students' development. Learning styles can very well be classified

as one of the individual differences identified within teaching-learning process. An instruction carried out in accordance with learning styles may produce positive cognitive (Duman, 2010; Demir and Usta, 2011; Fan and He, 2012) and affective outcomes (Minotti, 2002; Minotti, 2005; Elci, 2008; Gencel, 2008). Research on learning styles has noted these styles as an explanation as to why some students are more successful than others at school (Dunn and Miligram, 1993).

Rita Dunn first brought "Learning styles" forward in

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1960. Dunn defines learning styles as “use of different and idiosyncratic tactics when learning or preparing to learn a piece of new and difficult information”, or “some biological and developmental features that turn what is a wonderful method of teaching for some students into a nightmare for some others.” (Boydak, 200; Acikgoz, 2003). The literature contains a variety of definitions and explanations concerning learning styles. This inconsistency in the literature on learning styles, says Ekici (2003), is a byproduct of its trivet nature with cognitive, affective, and physiological aspects, and a result of focus only on one of these dimensions by the researchers. This variation in the definition of learning styles has led to more than one type of classification in the literature. A study by Guven et al. (2008) has revealed that the classification in the literature involves 27 distinct learning styles. Although there have been various classifications of learning styles, Butler (1996) states that each individual has a unique thinking process, and these classifications do not say anything as to which one is the best or worst learning style, or which one is the right or wrong style.

Another reason why there is more than one way of classifying these learning styles is that personality traits also influence individuals' choice among these styles. In this sense, it will not be wrong to conclude that learning styles vary as much as characters do. The way individuals intake and process information, as well as their responses regarding motivational and environmental settings, are all considered as factors determining how learning styles are classified. Even though the literature offers an array of various definitions and classifications concerning learning styles, still the following is what can be distilled from what the study has found out about learning styles so far:

1. Learning styles may vary across individuals. Each individual has a unique style.
2. Many factors affect identification of learning styles.
3. An individual's learning styles are consistent, and they form a unity.
4. Many theoreticians have treated learning styles separately, and they haven't included features related with “study skills” into the styles.
5. Most of the definitions and classifications regarding learning styles are based on the interaction between the learner and the information.
6. Various scholars have produced different classifications as a result of focusing on distinct features of learning styles.

Many factors are influential over the formulation of one's learning styles. These factors can be grouped into two as the inborn and the acquired. Kaminska (2014) states that the question of learning style being biologically or environmentally determined has not yet been fully answered. “Some research indicates that certain elements

of learning styles are outcomes of genetic make-up while others are influenced by life experiences” (Kaminska, 2014). For instance, Restak and Thies (1979) believe that learning styles mostly have genetic roots; whether someone feels better studying under dim or bright light, prefers a silent or noisy environment to study, or chooses studying at a table or on a bed are all dependent on genetics (Dunn and Milgram, 1993). As cited by Guven (2004), earlier experience and the expectations of one's environment play a crucial role over the development of learning styles. Furthermore, family, school, and workplace are also included among the factors affecting individuals. Dunn et al. (1989) note that learning styles are related to individual's moment of birth, cognitive development, maturation, which hemisphere of the brain is more active, holistic and analytic processes, individual's nature, and their self-conception. Referring especially to Kolb's and Dunn's study (2005), Cuthbert (2005) underlines that one's learning styles do not change quickly, but, in time, qualitative modifications may be observed as a result of growing, maturation, and changing environmental factors. On the other hand, Babadogan (2003) concludes that 20% of an individual's learning styles is genetically determined, and the rest is associated with students' preferences such as silence or background noise, bright or dim light, relaxed or upright posture, studying non-stop or with breaks, perceptual modes (auditory, visual, tactile), nibbling or not during studying, sticking with fixed times of a day, being mobile or immobile, and holistic or analytic thinking processes when focusing on a piece of new and difficult academic information. However, related studies report that individuals are not equally affected by these variables forming their learning styles. Many learners are primarily influenced by 6 to 14 variables (Dunn, 1984).

Other aspects of learning styles, apart from those transmitted through genetics, grow as an individual's experiences accumulate. Social preferences, learning motivation, and responsibility can be taught depending on the developmental level of individuals. This theory is supported by the differences and similarities between students from various cultural backgrounds and success levels, and their learning styles (Dunn, 1995). In addition, learning styles also vary across individuals from the same culture or group, across siblings, and parents and their children (Dunn and Milgram, 1993; Dunn and Griggs, 1995). This discrepancy strengthens the theory that learning styles are not only comprised of those features transferred via genetics, but there are other aspects that can change and improve learning styles.

Dunn (1984) finds it “confusing” that children and their parents and also siblings may have different learning tendencies despite the genetic aspects of learning styles. Relevant research points that children and parents generally have distinct learning styles. Children's learning styles do not reflect the learning styles of parents, and vice-versa. Thus, each parent and each child may have

totally different learning preferences (Dunn and Milgram, 1993). In spite of these differences, parents mostly tend to inoculate their own learning styles back at school days onto their children. This is generally attributed to the possibility that parents may not be aware of the fact that their children may prefer different learning styles. In a study examining the correlation between parents' perception regarding their children's learning styles and the actual learning styles that their children prefer, DeBello and Guez (1996) have reported no significant relation between what parents think about the learning styles of their children and those that their children really prefer and employ. This led to a pool of findings supporting the idea that parents do not have comprehensive information about their children's learning preferences. Moreover, this unawareness causes parents to impose their own styles onto their offspring. Dunn and Milgram (1993) think the efforts to infuse children with their parents' learning styles constitute a major source of problem, and they warn that this may end up with disappointment on both parents and children. Even the siblings sharing the same family and parents may not have exactly the same or at least similar learning preferences.

The literature holds a body of research concluding either that learning preferences of children and their parents may be different, or that they may be using the same or at least similar styles. As cited by Leone (2008), in a study examining the differences and similarities between children's and parents' learning styles, Dunn (2006) concludes that if there is more than one child in a family, the first child tends to have similar learning preferences with one of the parents and the second child develops similar learning styles with those of the other parent. In a more recent study, Borchetta (2007) focuses on the similarities and differences between siblings' learning styles and those of their parents', and the author reports that children are inclined to have similar preferences with their parents in terms of study posture, light effects, and visual learning conditions. In this sense, sons have been noted to be like their fathers in terms of relaxed posture and daughters to resemble their mothers with respect to strong academic learning motivation. However, overall analysis of these data hardly indicates any significant similarity between the learning styles of parents and those of their children.

Research investigating if learning styles are formed by genetic factors or they are acquired via experience is scarce in both Turkish and international literature. Of those international studies, many were completed in early 1980s and they mostly scrutinized Dunn and Dunn learning styles theory. In this regard, Leone (2008) states that international research on the similarities and differences between parents' and children's learning styles is quite limited. The literature review completed for the present study has yielded no Turkish research on the relation between the learning preferences of parents and those of their children. Of all the studies conducted on

learning styles in Turkey, almost all focus on the influence of parents' attitudes over learning preferences (Palut, 2008; Bozaslan, 2012), if learning styles vary across several socio-economic variables (Demir and Sen, 2009; Merter, 2009), scale development (Balat et al., 2012), and identifying the learning styles of learners at different levels (Mutlu, 2008; Demir, 2010).

This research has been designed to identify the relationship between parents' learning styles, and those of their children since international studies mostly narrow down on Dunn and Dunn learning styles and there is no single research focusing on this aspect in Turkey despite the high number of relational and empirical studies. Accordingly, the overall aim of the current study is to find out the degree of similarity between parents' and children's learning styles, and to investigate if some socio-economic variables relate to the similarities or differences between these learning preferences. Based on this overall aim, answers have been sought for the following questions:

1. Are the learning styles of parents and prospective teachers similar with respect to Kolb learning styles?
2. Are the learning styles of parents and prospective teachers similar with respect to Grasha and Reichman learning styles?
3. Are socio-economic variables influential over either the similarity or the difference between parents' and prospective teachers' learning styles?

METHODOLOGY

Research design

This research has a relational survey design. Relational surveys aim to determine the degree of change or if there is a change among two or more variables. In such studies, the variables to be examined in terms of their relation are symbolized separately (Karasar, 2007). In the current study, the relation between the learning styles of pre-service teachers and those of their parents has been investigated, and the influence of several socio-economic variables over this relation has been questioned. In this sense, the dependent variables of the present study are the learning styles of both prospective teachers and their parents, and the independent variables are some socio-economic factors such as the department the pre-service teachers are studying, the educational background of the parents and the neighborhood.

Research universe and sample

The universe of this study is the prospective teachers studying at various teacher training programs at Trakya University and their parents. With respect to the sampling for the research, pre-service teachers from different departments (because each department requires a score from separate fields of study) and their parents with a degree at least from middle school and above were selected. The reason the researcher chose prospective teachers from different departments is to access a variety of learning styles during data collection. Likewise, parents with a degree at least from a middle school or above were chosen because the participants were expected to have a long period of learning experience, and also to

Table 1. Numerical data regarding the teacher training programs from which research data have been collected.

Teacher training programs	The number of prospective teachers in the research universe	The number of prospective teachers in the actual research data	The number of parents who responded the inventories
Primary School	120	87	29
Pre-School	42	40	-
Science	39	39	4
English Language	51	45	-
Total	252	211	33

know themselves in terms of how they learn. These conditions were mandated in order to enhance the validity of the findings to be obtained in this study. However, some difficulties were identified during the administration of data collection tools to the parents; therefore, no scale was given to the parents of prospective teachers studying in the pre-school and language teaching departments.

Research data were collected in two phases. In the first one, prospective teachers studying in different teacher training programs such as primary school, pre-school, science, and English language were administered the data collection tool; and in the second one, teacher candidates' parents whose educational background met the selection criteria were given a second data collection tool. Based on the demographic information pre-service teachers provided during the first phase of data collection, some prospective teachers were asked to administer the second data collection tool to their parents at the end of the fall term of 2012 to 2013 academic year. By the start of the spring term in the same academic year, it was clear that the number of parents who responded to the tool was not enough. Therefore, research data was mostly collected from the teacher candidates at primary school teacher training program due to ease of access to both students and their parents. In this sense, Table 1 depicts the numerical values concerning the data collection process of the present study.

As displayed in Table 1, the research universe included a total of 252 teacher candidates, yet only 211 of them were appropriate to partake in the study. Some of the data concerning the teacher candidates were excluded from the analyses due to lack of some relevant information such as name/last name/nickname or lack of care in filling out the scales. With respect to the parents who were administered the data collection tools, 33 parents' learning styles were determined. Data set concerning these 33 parents and their children served the settlement of the research findings.

Data collection tools

Two different learning style approaches were employed in this study in order to obtain more valid results; thus, Kolb and Grasha-Riechman learning style inventories were utilized as data collection tools. The reason why Grasha-Riechman learning styles inventory was used is that the researchers think that this scale has a more tangible classification of styles, and the items in the scale are based on real learning situations, which would help the parents respond to the scale more easily. Likewise, Kolb learning styles inventory was chosen because it is the first one adapted to Turkish language (Askar and Akkoyunlu, 1993) and the most frequently used one in national-wide surveys.

Of course, there is an adapted version of Grasha-Reichman learning styles inventory within Turkish literature (Zereyak, 2005; Cengizhan, 2006; Kocak, 2007), and it has been employed as data collection tool in several studies, too. This scale consists of 60

Table 2. Reliability coefficients of Grasha-Riechmann learning styles inventory according to learning styles classification.

Learning style	Alpha value
Independent learning style	0.662
Passive learning style	0.644
Cooperative learning style	0.757
Dependent learning style	0.650
Competitive learning style	0.815
Participatory learning style	0.774

items segregated across six learning styles such as independent, passive, cooperative, dependent, competitive and participatory (Grasha, 2002). Each learning style is examined through 10 items. The subjects score the items from 1-to-5, and the learning style with the highest score is determined as the learning style of the subject. The internal consistency of the scale was tested based on the data collected from the prospective teachers. Table 2 presents the internal consistency coefficients of Grasha-Reichman inventory.

As clearly seen in Table 2, the alpha values for all the learning styles are higher than 0.60. Generally, an alpha value of 0.70 is required for the internal consistency to be within ideal limits. However, low alpha values are not a surprise for scales with few number of items since the alpha value is sensitive to the total number of items in a scale (Akbulut, 2010). Thus, internal coefficients of the data obtained from the research sample indicate a reliable internal consistency. On the other hand, Kolb learning styles inventory is composed of 12 learning situations each of which requires a grading from 1 to 4 (1: the least appropriate, 2: somewhat appropriate, 3: appropriate, and 4: the most appropriate) (Güven, 2004). Each grading matches up with one of the factors comprising the inventory. In this sense, the first factor is Concrete Experience "CE", second one is Reflective Observation "RO", third is Abstract Conceptualization "AC", and the fourth is Active Experience "AE". Internal consistency of each factor has been analyzed for the reliability of the inventory. Internal consistency coefficients across sub-factors are presented in Table 3.

Table 3 shows that reliability coefficients of all the sub-factors of Kolb learning styles inventory are higher than 0.70. This means that the internal consistency of the inventory is reliable in terms of the factors (Palland, 2001). Furthermore, the relational values between the factors were also examined in order to see the relation across these factors and to set the validity of the inventory. Table 4 displays the relational values across factors. Table 4 depicts that the relation values among all factors are negative, which provides solid indicators that the measurement is valid. Especially, the strong

Table 3. Reliability coefficients of Kolb learning styles inventory in terms of sub-factors.

Sub-factors	Alpha value
Concrete experience (CE)	0.743
Reflective observation (RO)	0.733
Abstract conceptualization (AC)	0.800
Active experience (AE)	0.761

Table 4. Relational values across the factors of Kolb learning styles inventory.

Variable	CE	RO	AC	AE
CE	1	-259**	-503**	-162*
RO	-	1	-141*	-530**
AC	-	-	1	-396**
AE	-	-	-	1

* $p < .001$; ** $p < .005$.

and clear negative relation between concrete experience and abstract conceptualization ($r = -.503$) and the one between reflective observation and active experience ($r = -.530$) point that the data obtained from the factors are distinctive and valid.

Accompanied by a form about demographic information, the data collection tools were administered to the prospective teachers simultaneously. The candidates were asked to write either their names or nicknames, if they had any hesitations, on the tools so that the second step of the study concerning the parents could be completed correctly.

Data analysis

Statistical package for the social sciences (SPSS) 17.0 has been employed to analyze the data collected via both inventories. First, the data were uploaded into the program. During the data process, special attention was paid to write the demographic information about the teacher candidates, and the data obtained from the tools on the same line. All data, if any, were excluded from the analysis if anything had been missing or misplaced. Since the tools contained no negative statement, reverse grading was not conducted. Following the data process on the software, prospective teachers' learning styles were identified based on their scores on the inventories. Concerning the relation between the learning styles of pre-service teachers and those of their parents, some non-parametric tests were employed. Chi-square and non-parametric methods for the relational tests were utilized because the obtained data was a kind of classification data.

RESULTS

Results and relevant interpretations are presented in accordance with research questions. Therefore, first, findings regarding Kolb learning style inventory are reported, and then those concerning Grasha-Riechmann inventory are discussed. Lastly, the findings about socio-

economic variables and the learning styles of prospective teachers and their parents are noted.

Research question 1: Are the learning styles of prospective teachers and their parents similar with respect to Kolb learning styles inventory?

The first research question regards the relation between the learning styles of prospective teachers and those of their parents in terms of Kolb learning styles inventory. To do so, individuals' learning styles served as classification estimate level, and the relation between Cramer's V and Phi value was examined. Table 5 shows the values concerning these relation levels. As can be seen in Table 5, no significant relation between the learning styles of teacher candidates and those of their parents has been detected based on the data from Kolb learning styles inventory.

Research Question 2: Are the learning styles of prospective teachers and their parents similar with respect to Grasha-Riechmann learning styles inventory?

Second research question concerns the relation between the learning styles of prospective teachers and those of their parents in terms of Grasha-Riechmann learning styles inventory. Relevant values are depicted in Table 6. Table 6 indicates that there is mid-level (Cramer's $V = .561$) significant ($p < .05$) relation between the learning styles of teacher candidates and those of their mothers whereas no significant relation has been detected between the learning styles of pre-service teachers and those of their fathers. This relation between the learning styles of mothers and those of prospective teachers is attributed to qualities of Grasha-Riechmann learning styles classification and to cultural factors. Grasha-Riechmann learning styles classification is more about students' attitudes towards in-class activities than their personal and cognitive features (Montgomery and Groat, 2004).

Thus, the classification is not based on how learners intake and organize new information but on the interaction learners have within the classroom setting. Therefore, this classification, as for Curry (1983), belongs to the group of classifications pertaining to learners' learning preferences about the setting rather than cognitive personality centered classifications. This aspect of learning styles makes it possible to classify learners in certain groups depending on environmental factors and the influence from these factors. Since learning styles are not cognitive personality centered in this inventory, the prospective teachers may have grown similar to their mothers in terms of studying and learning habits as a result of guidance and direction from mothers starting

Table 5. The relation between the learning styles of prospective teachers and those of their parents with respect to Kolb learning styles inventory.

Relation type	Number of valid estimates	Cramer's V value	Phi value	Significance
Prospective teacher / Mother	33	0.380	0.658	0.283
Prospective teacher/ Father	33	0.481	0.862	0.078

Table 6. The relation between the learning styles of prospective teachers and those of their parents with respect to Grasha-Riechmann learning styles inventory.

Relation type	Number of valid estimates	Cramer's V value	Phi value	Significance
Prospective teacher / Mother	33	0.561	1.123	0.003*
Prospective teacher / Father	33	0.408	0.816	0.341

p<0.05.

Table 7. Learning style differences among prospective teachers in terms of their neighborhoods.

Variable	Grasha learning style	Kolb learning style
Chi-square	0.851	7.765
Degree of freedom	4	4
Significance	0.931	0.101

Table 8. Differences between the learning styles of mothers and those of prospective teachers based on mothers' educational background.

Variable	Learning styles of prospective teachers		Learning styles of mothers	
	Grasha lear.sty	Kolb lear.sty.	Grasha lear.sty	Kolb lear.sty
Chi-square	1.013	2.731	0.683	8.591
Degree of freedom	5	5	5	4
Significance	0.962	0.741	0.984	0.072

from early ages.

Research question 3: Are socio-economic variables influential over either the similarity or the difference between parents' and prospective teachers' learning styles?

As part of the efforts to answer the third research question, learning styles of prospective teachers were examined to see if there was any variance across different neighborhoods. In addition, learning styles of parents were also analyzed to determine if there was a difference among the participants (both students and parents) in terms of parents' educational background. Since the relevant data set is small, non-parametric methods were employed to be able to answer this question. Accordingly, Table 7 depicts the data indicating

if prospective teachers' learning styles vary across different neighborhoods. Table 7 shows that teacher candidates' learning styles do not significantly ($p>.05$) vary in terms of their neighborhoods. Likewise, Table 8 and Table 9 present the data concerning if learning styles of both parents and prospective teachers vary across different educational backgrounds of parents.

As shown in Table 8, learning styles of pre-service teachers and their mothers do not vary significantly across mothers' different educational backgrounds. Based on this, one can conclude that mothers' educational backgrounds are not definitive over learning styles. Analysis of the values in Table 9 points to a similar conclusion with respect to the influence of fathers' educational background over prospective teachers' learning styles, which is not statistically significant. Under the light of these findings, one may easily conclude that educational background has no effect over learning

Table 9. Differences between the learning styles of fathers and those of prospective teachers based on fathers' educational background.

Variable	Learning styles of prospective teachers		Fathers' learning styles	
	Grasha lear.sty	Kolb lear.sty.	Grasha lear.sty	Kolb lear.sty
Chi-square	4.470	4.218	4.280	3.658
Degree of freedom	4	4	3	3
Significance	0.346	0.377	0.233	0.301

styles.

DISCUSSION AND CONCLUSION

The field of learning styles has always been one of the topics of research and interest since it was first introduced into the literature. This conceptualization helps us to determine, classify, and define individual differences and preferences regarding learning process. Distinct classifications of learning styles within the literature led to grouping these classifications under certain titles, which brings the studies of Curry (1983) and Sadler and Smith (1996) into mind. In Curry's (1983) onion model, learning styles are categorized in accordance with their specific qualities. According to this model, the inner-most layer of the onion hosts cognitive styles, mid-layer are the styles based on information processing, and the outmost layer of the onion represents those relevant to individual's learning preferences.

Sadler and Smith (1996), on the other hand, group learning styles into four; based on cognitive personality, information processing, study approaches and learning preferences. According to Curry's (1983) model, the outer layer components are more likely to include changeable and observable features due to influence from environmental and cultural factors. Sadler and Smith's (1969) classification is no different. Classifications regarding study approaches and learning preferences are those bearing a higher probability of change as a result of environmental factors. Considering the factors shaping the classification of learning styles, there are two basic determiners; one is whether learning styles have any genetic and congenital qualities, and two is whether learning styles change due to environmental influence or not. Kolb and Grasha-Riechmann learning styles employed in the current study are located on the outer layer of the onion. Both Kolb and Grasha-Riechmann learning styles are classifications based on experience and environmental qualities. In this sense, one of the frequently debated issues in the literature is whether learning styles are inborn characteristics or they develop in accordance with the influence from environmental and cultural factors (Dunn and Milgram, 1993; Dunn, Beudury and Klavas, 1989; Dunn and Griggs, 1995; DeBello and Guez, 1996; Leone, 2008).

Along with this debate and the vagueness regarding

how important these factors are in shaping learning styles, the scarcity of studies investigating the elements influential over learning styles is noteworthy despite the large body of research on learning styles both on national and international scales. Examining parents' and their children's learning styles in order to find out what factors are effective over the formation of learning styles may be an appropriate method, or at least a hint, to search if learning styles are genetic or they are influenced by learning experiences and environment. Thus, this research aimed to identify the learning styles of parents and prospective teachers and to determine if there was any relation between the two.

This study has employed Kolb and Grasha-Riechmann learning style inventories. Both Kolb and Grasha-Riechmann inventories are classified in the outermost layer of the onion model by Curry (1983), that is, these learning styles are formed as a result of individual's learning experience and preferences. Research findings have indicated that there is no relation between the learning styles of prospective teachers and those of their parents with respect to Kolb learning styles inventory while a mid level relation between the learning styles of pre-service teachers and those of their mothers has been identified in terms of the data set obtained from Grasha-Riechmann learning style inventory. This lack of relation between the learning styles of teacher candidates and those of their parents is in line with the findings of Dunn and Milgram (1993) and Borchetta (2007).

On the contrary, the mid-level relation between the learning styles of prospective teachers and those of their mothers can be noted as one of the interesting findings of the present research. Neither national nor international literature reviews have yielded a similar result pointing a relation between the learning styles of students and those of their parents. However, a similar conclusion has been made by Borchetta (2007). Borchetta (2007) concluded that boys resemble their fathers and girls resemble their mothers with respect to learning process. Since no gender comparison has been held in this study, it would be wrong to state that Brochetta's (2007) findings are supported with the current research. Cultural elements are thought to be responsible for the similarity between the prospective teachers and their mothers. Indeed, the results of several nationwide studies (Ahioglu, 2006; Gelbal, 2008; Gungor, 2009; Kaya and Tuna, 2010; Demirezen and Akhan, 2013) have underlined the

definitive role of mothers over their children's learning preferences through trying to build a study habit, helping with the homework assignments, and taking care of every need of their child especially with their younger children at early ages. The fact that this research has concluded a resemblance between the prospective teachers and their mothers in terms of learning styles may be considered as a reflection of a reality that it is the mothers who gets engaged in frequent interactions with their children with respect to learning processes starting from early ages. In addition, Al-Khayat et al. (2013) indicate that the learning styles are connected with the parents especially mothers who have the responsibility of teaching and following up their children in Jordanian Society.

Another research question is directed to figure out if learning styles vary across several social variables. Accordingly, learning styles have been examined to see if they change based on the neighborhood the teacher candidates live and the educational backgrounds of parents. Statistical analyses have yielded that learning styles do not vary across these two variables. All the national studies focusing on the variance of learning styles across the neighborhoods of the participants (Merter, 2009; Besoluk and Onder, 2010; Tomakin, 2012; Baran et al., 2014) have produced different results. For instance, neighborhood was determined as a factor influencing the variance of learning styles in Merter (2009) and Tomakin (2012) whereas the same variable of neighborhood has been noted to have no impact over learning styles in Besoluk and Onder (2010) and Baran et al. (2014). Likewise, other nationwide studies (Yenilmez and Çakır, 2005; Besoluk and Onder, 2010; Gulerci and Oflaz, 2010; Gulpinar et al., 2011; Seven et al., 2012) examining if learning styles vary based on the educational backgrounds of parents have revealed no relation between the learning styles and the educational backgrounds of parents. In this sense, findings of the present study do not match with those in the literature.

Investigating if there is a relation between learning styles of prospective teachers and those of their parents, this research can be considered as one of the pioneers within the national literature in terms of the issue it focuses on, and the field of study it belongs to. In this sense, some limitations also accompany the study. Being unable to reach a larger number of parents and pre-service teachers from a variety of fields is the first limitation. Therefore, there is a need for similar studies in the literature to increase the scientific information about this topic. Researchers aspiring to design similar studies may employ different data collection tools for various learning styles in different groups within Curry's (1983) classification. Especially, cognitive and information processing learning styles can be selected and relevant studies can be completed to determine similarities and differences between parents and their children. Furthermore, researchers can enhance their research questions by adding several social variables into their data collection tools. Different conclusions can be made in accordance

with different variables such as the number of siblings, or being the first child or not.

Conflict of Interests

The author have not declared any conflict of interests.

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