The Investigation of the Level of Self-Directed Learning Readiness According to the Locus of Control and Personality Traits of Preschool Teacher Candidates

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Abstract

The aim of this study is to investigate the relationship between the level of self-directed learning readiness, locus of control and the personality traits of preschool teacher candidates. The survey method was used for this study. The study group consisted of 151 teacher candidates who volunteered to participate in the study from Preschool Education department at Atatürk Faculty of Education, Marmara University. A Demographic Form, Self-Directed Learning Readiness Scale, The Big Five Inventory and Locus of Control Scale were used as the data collection tools. The results of the study indicated that there is a significant relationship between the level of self-directed learning readiness, "extraversion" and "conscientiousness" traits of personality and "personal control" subscale of the locus of control. The results could be discussed in terms of training the preschool teacher candidates to improve their self-directed learning readiness levels by considering their personality traits and locus of control.

Keywords: Preschool teacher candidates, Self-directed learning, Locus of control, Big five personality traits.

Introduction

In our era in which knowledge is progressing rapidly, one of the main aims of education is to raise individuals who can assess their own needs of learning and the sources and methods needed to overcome these needs and who can regulate their own motivations during process and who can learn by themselves (Boekaerts, 1999). The two of the significant variables that literature indicates to obtain these skills are traits of personality and individual's locus of control, which can be considered as a personality trait (Lefcourt, 1992). It is stated that individuals, especially who have self-control and internal control, take more responsibility during the learning process and gain more academic success

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(Silvester, Anderson-Gough, Anderson & Mohamed, 2002). It is required for teacher candidates to have this skill to contribute their students' self-directed learning in the future (Şahin & Erden, 2009).

In this study, it is aimed to identify the relationship between (1) the level of readiness for self-directed learning, and (2) traits of personality and the locus of control of the preschool teacher candidates. For this purpose, identifying the degree of the relationship between the level of self-directed learning readiness and the traits of personality and the locus of control is the question to be answered.

In this context, the literature about (1) self-directed learning, (2) theories based on the big five personality traits, (3) locus of control based upon the definition of Rotter's and (4) the relationship between self-directed learning, personality traits and locus of control are discussed as below.

Self-directed Learning

In recent researches, it has been studied how individuals achieve the learning outside the scope of formal education by their own control and which variables are related to this learning. According to Hiemstra (1994), even it takes place in the formal education environments the majority of the learning activities are under the initiative of the individual who learns. According to him, concepts like self-directed learning, self-regulated learning, self-planned learning, self-education, independent learning and open learning are expressing the same phenomenon. During the self-directed learning process control is a very important variable (Brockett & Hiemstra, 1991; Hiemstra, 1994; Knowles, 1990). Zimmerman (1998 cited in Adagideli, Saraç & Ader, 2015) stresses that self-regulated learning could be defined as a self-directed process in which the individuals transform their mental abilities into academic achievement. For self-directed learning it is required for an individual to set the goals and strategies of learning, make decisions about how to use the resources and evaluate the success and lead and sustain his/her motivation. According to Brockett and Hiemstra (1991), the individual who learns with self-management needs to have the self-directed abilities and it is a personality trait.

Big Five Personality Traits

Either inherited or obtained, all the behaviours, talents, desires, emotions and habits which distinguish one individual from another, form one part of the individual's personality (Baymur, 1994).

There are many theorists who have investigated the structure of personality. One of them, Goldberg (1981 cited in Güney-Karaman, Doğan & Esen-Çoban, 2010), put forth the "Big Five" theory about the structure of the personality. Goldberg extended the model of Cattell who accepted an approach that separate the personality into dimensions and he has developed the five factor personality model (Burger, 2006). McCrae and Costra (2003), using the factor analysis technique, first identified the personality with "extraversion", "neuroticism" and "openness". Later, "conscientiousness" and "agreeableness" are added to these dimensions. The results of factor analysis also supported the Big Five Personality Model of Goldberg's (1981). This model is used on this research because it is one of the most widely used personality theory (Sığrı & Gürbüz, 2011).

The concept of "extraversion" expresses being enthusiastic, cheerful, talkative, energetic and humanistic. Whereas "openness" refers to individuals who are open to new experiences and have a strong imagination. Individuals with "neuroticism" tend to experience negative emotions like anger, anxiety, depression, anger, sadness or irritability. Individuals with a sense of high responsibility, self-discipline and determination are

classified under "conscientiousness". "Agreeableness" is concerned with the characteristics of getting well with others and being compatible (Güney-Karaman et al., 2010; McCrae & Costa, 1991).

Locus of Control

As a result of the behaviours shown throughout life, the individual can create an expectancy of generalized reinforcement. Rotter (1990), classified individuals in two groups; one group who consider reinforcements are in their control as "internal locus of control" and others who believe in external forces such as luck and fate as "external locus of control".

Locus of control is associated with a lot of personality variables (Lefcourt, 1992). Rotter (1990), emphasized that individuals with high internal control are more sensitive to their own environment and take more responsibility to regulate it. It is known that belief in internal locus of control is positively associated with harmony (Karahan et al., 2005), self-respect (Özcan-Candangil & Ceyhan, 2006), successful interpersonal relationships (Sayın, 2000), subjective well-being, effective conflict resolution skills (Hisli-Şahin, Basım & Çetin, 2009), coping with stress and burn out state (Tümkaya, 2000).

The Relationship between Self-directed Learning, Personality Traits and Locus of Control

Reviewing the literature, it is observed that the studies investigated the relationship between personality traits and academic achievement (Busato et al., 1999; Sığrı & Gürbüz, 2001; Rubinstein, 2005). There are lots of studies showing that the personality traits have a relationship with learning styles (Busato, Prins, Elshout & Hamaker, 1999; Drummond & Stoddard, 1992; Furnham, Jackson & Miller, 1999). One research identified that except being extraversion, four of the five personality traits; openness, conscientiousness, agreeableness and neuroticism are positively associated with academic success and when all variables are taken with multiple regression analysis, conscientiousness is the most efficient factor that predicts academic success (Sığrı & Gürbüz, 2001). Busato et al. (1999), detected a significant relationship between the "conscientiousness/self-directedness" trait of personality and academic success. Another research conducted with college students, showed us that the most common trait in study group is agreeableness. According to the results of the same research, it is stated that the relationship between personality traits, gender, department and grade point average are not significant. Another result of it, showed that there is not a significant relationship between learning styles and personal traits of students (Yanardöner, Kızıltepe, Seggie & Akmehmet-Şekerler, 2014). However, Rubinstein (2005), in his study conducted with 320 college students, found significant relationship between personality traits, gender and academic departments.

Also it is found that internal locus of control is positively associated with academic success (Dağ, 1991; Sayın, 2000). Students with internal locus of control are aware that success depends on them and pay more attention to achieve their goals (Burger, 2006). And also these students make better use of time and show more constructive responses against blockings (Yeşilyaprak, 2004). Also, it can be said that people who have internal locus of control, indicate more responsibility on their learning process. Jansen and Carton (1999) have found that these people start and finish academic tasks and homework earlier than the external locused people.

Method

This study has a correlational survey design. The correlational research method requires observation of what naturally goes on in the world without interfering directly. The data is analysed to see the relationships between naturally-occurring variables rather than making statements about cause or effect (Field, 2005). In this section, the study group, data collection tools, research design and data analysis were discussed in detail.

The Study Group

In this study convenience sampling method was used. This sampling method is used to describe selection of a sample that has been selected from the target population on the basis of their accessibility or convenience to the researcher (Ross, 2005). The study group consisted of 151 teacher candidates studying at the Preschool Education Department at Atatürk Faculty of Education, Marmara University. All of the participants were junior students and the data was collected in the 2013-2014 academic year. 145 of the participants (96%) were women and 6 of them (4%) were men in the study group. 8 of the participants (5.3%) identified their socio-economic status as low, 132 of them (87.3%) as average and 11 of them (7.3%) as high. Considering the average grade, 4 of the participants (2.6%) have low, 85 of them (56.3%) have medium/average and 61 of them (40.4%) have high grade point average.

Data Collection Tools

Demographic Data Form: With the form developed by researchers, it is intended to obtain the demographic information (age, gender, income rate, sources and time used for informal learning etc.) of the teacher candidates in the study group of the research.

Self-directed Learning Readiness Scale (SDLRS). Self-Directed Learning Readiness Scale (SDLRC) developed by Fisher, King and Tague (2001), is adapted into Turkish by Şahin and Erden (2009). When the structure of original scale of three items; self-management, motivation to learn and self-control skills, and results obtained from the Turkish version are compared, it was found that these three items were overlapped. The Turkish version's Cronbach's alpha coefficients were 0.87 for the subscale of self-management, 0.86 for the subscale of motivation to learn and 0.79 for subscale of self-control skills. There are 40-item and 52-item scales of self-directed learning readiness scale. 52-item scale was used in this study.

Big Five Inventory (BFI). The original form of the inventory is developed by John Bonahve and Kentle in 1991. The Turkish version of the inventory was adapted by Güney-Karaman et al. (2010). Inventory consists of 40 short items some of which are reverse coded. 5 subscales of the inventory are extraversion, agreeableness, conscientiousness, neuroticism and openness. Inventory is Likert-type scale where the responses are ranged from "strongly agree" to "strongly disagree". The internal consistency of the subscales of the Turkish version Big Five Inventory was found as; extraversion α= .77, for agreeableness α= .81, for self-control α=.84, for neuroticism α= .75 and for openness α= .86.

Locus of Control Scale. Locus of Control Scale, developed by Dağ (2002), is a 5 point Likert type scale which consists 47 items. This scale is evaluating whether the individuals believe the consequences of their behaviours are controlled by themselves or other than their own (for example luck or fate). Most of the items on this scale were taken from Rotter's Internal-External Locus of Control Scale (RIELCS). However new items considering control areas which were not included in the adapted items of the original scale, were added and questions were transformed into Likert type to convert it into a structure which is easier to use by the raters (Dağ, 2002). The rising in the points reflects the belief in external locus of control. Internal consistency of the original scale is found as .92 (Cronbach's alpha=

0.92) and test- retest reliability of it is .88 (Pearson's *r*= 0.88). 5 factor structure of the scale is demonstrated as personal control (18 items), belief in chance (11 items), meaninglessness of the effortfulness (10 items), belief in fate (3 items) and belief in unjust world (5 items).

Research design and Procedure

The study which investigates the relationship between the level of readiness for self-directed learning, personality traits and locus of control of the preschool teacher candidates, was designed in the survey model of quantitative research methods. Before the research started, permissions were taken to use the scales, and then the study group of volunteered students from the preschool education department filled the each form in one week intervals. Afterwards each student's forms were matched with each other.

Data Analysis

SPSS 15 statistical packet program was used for analysis of the data obtained during the research. Regression analysis was done in order to test the relationship between the level of readiness of self-directed learning and personality traits and locus of control of the preschool teacher candidates. During the analysis of the data the level of significance was accepted as 0.05.

The sample size for the variables was determined by making use of the sample size table given by Milton (1986). In order to use this table the R2 value was conservatively assumed to be as low as 0.30 and the number of independent variables was taken as 10, the maximum number of independent variables. The table shows figures obtained from the following formula:

$$n = k + 1 + \frac{t^2(1 - R^2)}{\Delta r_i^2}$$

While the regression analysis was applied the assumptions below were taken into account and considered to be achieved during and before the analysis:

- A linear relationship between dependent and independent variables was identified.

- It was observed that there was not a multiple correlation between independent variables (Pearson correlation coefficient between the independent variables was found smaller than 0.70)

- It was found that the error terms were distributed normally (normality).

- It was found that the variance of error terms were constant.

- It was identified that there was not a relationship between error terms and was found that the assumptions of multiple regression were occurred (Sipahi, Yurtkoru & Çinko, 2006).

- Standard multiple stepwise backward regression was used in this analysis. In this type of analysis to decide on the best set of explanatory variables the researcher includes all the possible independent variables in one multiple regression and rejects them one at a time. The decision to drop a variable is usually made on the bases of the contribution of that variable to the ESS, as judged by the *F* test (Gujarati, 2003).

Results

The results of the statistical analysis with survey data is presented in this section. First, the relationship between the self-directed learning readiness scale total score and locus of

control scale total score was analysed by regression analysis. Then, the predictivity of personality traits and locus of control variables on the level of readiness of self-directed learning were analysed. Later, the relationship between the level of self-directed learning readiness and locus of control and subscales of personality traits were examined separately.

Table 1: *Relationship between self-directed learning readiness and personal control*

Dependent variable: Self-directed learning readiness			
Independent Variable	β	*t*	*p*
Personal control	0.253	3.197	0.002
R=0.253	*R²*= 0.064	*F*=10.220	*p*= 0.02

As indicated in Table 1, it was found that personal control clarify the level of self-directed learning readiness in low terms (R= 0.253; R^2= 0.064; F= 10.220; p= 0.002). Accordingly it can be said that the level of self-directed learning readiness of junior preschool education students has a low relationship with personal-control variable.

Table 2: *Relationship between self-directed learning readiness level and personal control and personality traits together*

Dependent variable: Self-directed learning readiness			
Independent variable	β	*t*	*p*
Personal control	0.188	2,728	0.007
Personality trait	0.496	7.188	0.000
R=0.553	*R²*=0.306	*F*=32.679	*p* =0.000

It was found that personal traits together with the locus of control explain the self-directed learning readiness at a moderate level (R= 0.553; R^2= 0.271; F= 55.512; p= 0.000). Accordingly, it can be said self-directed learning readiness level of junior students of preschool education has a moderate relationship with personal traits and locus of control variables. It can be said personality trait variable depending on the locus of control variable is more of a focus on self-directed learning (β**=** 0.96).

When the analysis performed on regression assumptions were examined, although explanatory of the obtained model is low due to not encountering with multiple correlation problems and normal distribution of the error terms, it can be said that there is a low relationship between self-directed learning readiness with personality traits and locus of control.

Table 3: *Relationship between level of self-directed learning readiness and different locus of control subscales*

Dependent variable: Self-directed learning readiness			
Independent variable	β	*t*	*p*
Personal control	.295	3.684	.000
Belief in chance	.070	.725	.470
Meaninglessness of the effortfulness	.043	.468	.640
Belief in fate	-.097	-1.187	.237
Unjust world	.000	.001	.999
R= .342	*R²*= .117	*F*= 3.842	*p* = .003

It was found that locus of control levels state the level of learning readiness in low terms (R= 0.342; R^2= 0.117; F= 3.842; p= 0.003). Accordingly, it can be said that self-directed learning readiness level of junior students of preschool education has a low level relationship with the subscales of locus of control. It can be said that personal control

subscale of locus of control variable, has an explanatory effect on self-directed learning ($\beta= 0.295$). The others appeared to have no explanatory.

Table 4: *Relationship between self-directed learning readiness level and personal trait subscales*

Dependent variable: Self-directed learning readiness			
Independent variable	β	t	p
Extraversion	.114	2.426	.017
Agreeableness	.046	.609	.544
Conscientiousness	.376	6.347	.000
Neuroticism	.053	1.186	.238
Openness	.086	1.372	.172
R= .610	R^2= .372	F= 17.203	= .000

It was found that personal traits subscales express the level of self-directed learning readiness in a moderate level ($R= 0.610$; $R^2= 0.372$; $F= 17.203$; $p= 0.000$). Accordingly, it can be said level of self-directed learning readiness of junior students of preschool education has a moderate relationship with personal trait subscales. It can be said that conscientiousness of personal traits variable, has an explanatory effect on self-directed learning ($\beta= 0.376$). The others appeared to have no explanatory.

Table 5: *Relationship between level of self-directed learning readiness and conscientiousness trait of personality*

Dependent variable: Self-directed learning readiness			
Independent variable	β	t	p
Conscientiousness	.449	8.342	.000
R= .564	R^2= .318	F= 69.584	p= .000

When conscientiousness trait of personality examined separately it was found that it was explanatory on level of readiness at a moderate level ($R=0.564$; $R^2= 0.318$; $F=69.584$; $p= 0.000$). According to this, it can be said that there is a moderate correlation between the levels of the self- directed learning readiness and the level of conscientiousness trait of personality ($\beta= 0.449$).

Table 6: *Relationship between level of self-directed learning readiness and subscales of personal traits and locus of control variables*

Dependent variable: Self-directed learning readiness			
Independent variable	β	t	p
Extraversion	.113	2.409	.017
Conscientiousness	.356	5.943	.000
Agreeableness	.045	.596	.552
Neuroticism	.073	1.611	.109
Openness	.050	.788	.432
Personal control	.191	2.557	.012
Belief in chance	.020	.300	.765
Meaninglessness of the effortfulness	.000	.002	.999
Belief in fate	-.017	-.469	.640
Belief in adjust world	.029	.390	.697
R= .638	R^2= .407	F= 9.620	p= .000

It was found that the subscales of locus of control and personality traits are explanatory on the level of self-directed learning readiness at a moderate level ($R= 0.638$; $R^2= 0.407$; $F= 17.203$; $p= 0.000$). It can be said that there is a moderate relationship between the personal traits and locus of control subscales of preschool teacher candidates and self-

directed learning readiness. It can be said that extraversion and conscientiousness traits of personality together and personal control subscale of locus of control and self-directed learning have a relation (Beta$_{conscientiousness}$= 0.356; B$_{extraversion}$= 0.113; B$_{personalcontrol}$= 0.191). The others appeared to have no explanatory.

When the table was analysed a relationship between extraversion, conscientiousness and personal control was detected, so the relationship between only with these subscales was also examined.

Table 7: *Relationship between level of self-directed learning readiness and extraversion, conscientiousness traits of personality and personal control*

Dependent variable: Self-directed learning readiness			
Independent variable	β	t	p
Extraversion	.204	2.883	.005
Conscientiousness	.097	2.339	.021
Personal Control	.388	7.193	.000
R=0.621	R²= 0.385	F= 30.729	p= .000

It was found that, extraversion and conscientiousness traits of personality and personal control are explanatory on the level of self-directed learning readiness at a moderate level (R= 0.621; R^2= 0.385; F= 30.729; p= .000). It can be said that if extraversion and conscientiousness personal traits and personal control sub-dimension of locus of control variable are taken together lead to high levels of self-directed learning readiness (Beta$_{conscientiousness}$= 0.097; B$_{extraversion}$= 0.204; B$_{personalcontrol}$= 0.388).

Discussion

The results of analyzing the relationship between the level of self-directed learning readiness and personal traits and locus of control of preschool education students are presented in this section.

According to the research results, dimensions of locus of control explain the level of self-directed learning readiness in low terms. Accordingly, it can be said that level of self-directed learning readiness of junior students of preschool education has a low level relationship with locus of control variable. It was seen that there is a low level relationship between level of self-directed learning readiness of students participated in the study and locus of control subscales. It can be said that "personal control" subscale of locus of control variable can be explanatory power on self-directed learning. The others appeared to have no explanatory. Individuals with internal locus of control believe that events in their life derive primarily from their own actions and they consider the reinforcements are in their controls (Rotter, 1990). As the results of this study revealed, individuals with internal locus of control, or in other words people with personal control can also control their own learning.

Control is defined as an important variable in self-directed learning (Brockett & Hiemstra, 1991; Hiemstra, 1994; Knowles, 1990). As the research results revealed, it can be said that individuals with personal control show more control over their learning whereas individuals who believe in factors beyond personal control show lower levels of readiness during self-directed learning process. It can be concluded that, due to their belief in fate, luck or control of some external forces in learning process as well as in other cases, level of self-directed learning readiness of individuals with external locus of control is lower than the level of readiness of individuals with internal locus of control. The reason why individuals with internal locus of control are more successful (Silvester et al., 2002), can be explained with their being more active about learning and take more responsibility in learning process. Being active in learning process could be explained as

regulating own metacognitive, emotional and motivational situation, or briefly as self-regulation. And, it is also claimed that use of self-regulation strategies are related with the level of students' academic achievement (Kitsantas, Stean & Huie, 2009).

When the effects of personality traits and its subscales on the level of self-directed learning readiness were investigated, personality traits subscales affect the level of learning readiness in a moderate level. Accordingly, it can be said that level of self-directed learning readiness of junior students of preschool education has a moderate level of relationship with personal traits subscales. It can be said conscientiousness trait of personality is explanatory on self-directed learning. It was found that level of self-directed learning readiness of junior students has a relationship in moderate level with individuals with high level of conscientiousness trait of personality.

The other dimensions appeared to have no explanatory. This result suggests a parallelism with similar results obtained from research literature. Sığrı and Gürbüz (2011), in their research on relationship between personality traits and academic success, claimed that conscientiousness trait of personality is the most important feature to predict academic achievement. Similarly, Busato et al. (1999), showed a significant relationship between the dimension of "conscientiousness" and academic success. Moldasheva and Mahmood (2014), put forward that responsible individuals use alternative ways for learning. We can say that results of this research support their point of view.

It was found that personal traits and locus of control together represents level of self-directed learning readiness in a moderate level. When compared to locus of control variable, personality trait variable occurred to be more explanatory on self-directed learning. Reason for this can be explained with personal traits have more comprehensive structure including locus of control variable. When the effects of two independent variables on the self-directed learning was examined, it was found that extraversion and conscientiousness traits of personality together and subscales of locus of control variable, explained self-directed readiness in a moderate level.

As the results of the research indicated self-directed learning is associated directly with some variables. In order to raise individuals who are prone to self-directed learning, first it has to be aimed to identify the factors affecting this situation and increase this prone with interventions of which positive effects are proved. It was shown that with some interventions, internal locus of control based thoughts could be increased (Marsh, Trautwein, Lüdtke, Köller & Baumert, 2005).

Conclusion and recommendations

As a result, it was seen that the level of self-directed readiness of preschool teacher candidates are related to locus of control and personal traits. However, personal traits are more related to self-directed learning. It can be said that, especially "extraversion" and "conscientiousness" traits of personality and individuals with high level of personal control have an impact on self-directed learning readiness.

As it was shown in the conducted study, locus of control and personal traits have an effect on level of self-directed learning readiness. However, this relationship is not on a high level. For this reason, other variables which may have effect on self-directed learning readiness can be evaluated in accordance with literature and new researches can be planned. Also, the research can be repeated by increasing the number of teacher candidates in the study, so the relationship level can be identified again. In this study the relationship analysed only with preschool teachers. Research can be repeated with other teacher candidates from different departments and differences between departments can be examined. Yaman, Dündar and Ayvaz (2015) were found that teacher candidates'

achievement motivations significantly differ according to their grade level. Then the grade level could be accepted as another variable to control if it has an effect on the self-directed learning readiness of the targeted group. Awareness on self-directed learning can be increased by adding programs that can improve self- management skills in to the teachers' education. In this way teachers, as self-directed learning individuals, can be role models to their students.

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