Relationship Between the Spiritual Intelligence and Self-Regulation Skills of Education Faculty Students

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Abstract

The purpose of this study is to reveal the relationship between the spiritual intelligence characteristics and self-regulation skills of the Education Faculty students. The study also examined the spiritual intelligence characteristics and self-regulation skills of students by gender, place of residence, and academic achievement. The research is a quantitative study carried out with the relational screening model. The study was performed with the data collected from 606 teacher candidates, consisting of 352 female and 254 male students, selected through stratified sampling among the students attending the Education Faculty of Ahi Evran University in the academic year of 2017-2018. In the data analysis, independent t-test, one-factor ANOVA, and Pearson moment-product correlation coefficient were used. As a result of the research, it is concluded that there is a low level of relationship between students' spiritual intelligence characteristics and self-regulation skills, and it doesn't differ by the gender and place of residence variables. On the other hand, it is another result of the research that there is no relationship between the spiritual intelligence characteristics and self-regulation skills of the students and academic achievement.

Keywords: spiritual intelligence characteristics, self-regulation, academic achievement, education faculty

1. Introduction

1.1 The Concepts

It can be said that the concept of intelligence, which is defined as the whole of human ability of thinking, reasoning, the perception of objective facts, judgment, and deduction (TDK, 2009: 2228), is closely related to critical thinking and problem-solving abilities. When examining the definitions of intelligence, it is seen that some researchers use intelligence synonymously with talent (Gage and Berliner, 1998; Gardner, 2004) and others regard them as different fields (Ardila, 1999; Ceci, 1996; Zohar and Marshall, 2004). The studies on the brain and the introduction of new information about the structure of the brain as a result of these studies have provided new definitions and approaches to the concept of intelligence.

The first difficulty with the definition of spiritual intelligence is that it is thought that spiritual intelligence is synonymous with the concept of spirituality and that this concept is related to a religious dimension. We can say that the concept of mysticism arises as a form of intelligence from Gardner's multiple intelligence theory (Koenig, 2009: 1). Spiritual intelligence is not one of the eight parts of intelligence in Gardner's multiple intelligence theory. Gardner (2004) suggested existential intelligence or moral intelligence could exist. Later, many researchers have suggested that spiritual intelligence encounters the criteria Gardner sets for intelligence (Amram, 2007, Emmons, 2000a, b, King and DeCicco, 2009; Montgomery, 2013; Vaughan, 2002; Wolman, 2001).

Spiritual intelligence is often conceptualized as a separate form of King and DeCicco (2009: 69) describe spiritual intelligence as awareness, integration, and a set of mental abilities that contribute in the ability to adapt human beings to the immaterial and transcendental aspects of human mind. According to Gardner's (2004) criteria, people can improve their life quality by using these mental abilities. In addition, it may be crucial to use spiritual intelligence in our difficult and troublesome times in our lives because it can make our approach to changes in our lives more reasonable and logical (Vaughan, 2002).

The concept of mysticism, which constitutes one of the most important parts of human life, has been described in many different ways and recent studies have begun to focus on an applicable definition of this concept separated from the concepts of religiosity and morality (Emmons, 2000b, Vaughan, 2002, King and DeCicco, 2009). The fact that spiritual intelligence focuses on the nonmaterial side of human life causes it to be directly associated with religious beliefs.

There are disagreements among researchers about the definition of spiritual intelligence. Some researchers think that Gardner's intelligence in multiple intelligence theory meets spiritual intelligence (Amram, 2007; Emmons, 2000a, b; King and DeCicco, 2009; Montgomery, 2013; Vaughan, 2002; Wolman, 2001). Some researchers prefer to use the definition of existential intelligence as the counterpart of spiritual intelligence (Gardner, 2004; Halama and Strizenec, 2004), while others say that there is no exact and definitive description of mental intelligence (Mayer, 2000).

Nasel (2004) proposed his own definition of spiritual intelligence, describing it as the application of spiritual abilities, sources of conditions and environment. According to him, people use spiritual intelligence to solve problems in daily life, to think about existential issues, and to make logical decisions.

Mayer (2000) argues that the concept of spiritual intelligence may be better defined as spiritual consciousness. He defines consciousness as the ability to be aware of mental processes and awareness structure. According to Mayer (2000), it is more relevant for spiritual intelligence to be defined as a state of awareness and existence rather than a mental ability.

Coyle (2002) reviewed the relevant literature and found that the studies described spirituality mainly in three ways: the structural-behavioral definition focusing on behaviors such as prayer and going to church; value-driven approach which sees spirituality as the development framework of human potential; and the transcendent approach which focuses on one's experience of transcending one's own self in order to connect with superior meaning and power.

Wolman (2001) draws attention to existential elements in spiritual intelligence. Hence Wolman defines spiritual intelligence as the ability to ask final questions about the meaning of life. He also defines it as the ability to make a perfect connection between us and the world we live in simultaneously. Wolman (2001) adds to his model of spiritual intelligence the ability to understand the spiritual/moral dimension of life. At the same time, spiritual intelligence allows one to solve certain types of problems, especially spiritual and moral problems. King (2008) states that it would be a more correct approach to define spiritual intelligence as awareness, integration, ability to comply with non-material practices, and a form of mental ability that contribute to the metaphysical aspects of human being.

Vaughan (2002) believes that spiritual intelligence exists in all people and that it can be developed through various activities and practices. At the same time, he remarks attention the relationship between spiritual intelligence and coping with stressful events. King (2008) states that it would be a more correct approach to define spiritual intelligence as awareness, integration, ability to comply with non-material practices, and a form of mental ability that contribute to the metaphysical aspects of human being.

Researchers state that the concept of spiritual intelligence includes the intelligence that Gardner (2004) calls existential intelligence in general (Nasel, 2004; Vaughan, 2002; Zohar and Marshall, 2004). Halama and Strizenec (2004) focused on this issue and investigated whether spiritual intelligence and existential intelligence express the same concept as mentioned. Halama and Strizenec (2004), studying previous studies of spirituality and existential psychology, have concluded that spiritual and existential intelligence had some familiar aspects as well as unrelated aspects.

Spiritual intelligence is the realization of the meanings that the individual has. It is our spiritual intelligence that makes us question what we do in our daily lives and how much it projects our values, and many people have asked themselves these questions at some point during their career. It is a kind of assessment of the consistency between what they have and what they do. It allows the individual to feel peaceful and to believe that they are doing the right job (Ustten, 2008: 76).

Spiritual intelligence requires to think critically and to produce meaning that includes one's beliefs. To produce meaning and apply it in our lives, we have to acknowledge our failures as well as our successes (Yerushalmi, 2003). Here, spiritual intelligence is a form of intelligence that allows people to accept failures as well as successes, to accept themselves as it is, and to see failures as experiences acquired on the road to success. Spiritual intelligence is the type of intelligence that will alleviate the moral distress experienced by people when they fail or in the spiritual sense of depression and will make them more compassionate and more discreet in solving the problems they are facing.

Today, education aims to make sure that the student gets more reliable information and more responsibility for their learning in this process rather than the transfer of some information to the students. Therefore, students will be able to control their learning process and will be able to access information without a teacher and question the reliability of the information they receive. It makes the learning approach based on self-regulation important.

There are different approaches and definitions related to the concept of self-regulation in the literature. Aydin and Atalay (2015) define self-regulation as the individual taking responsibility for their learning process, planning, and controlling it. Zimmerman (2000) and Zimmerman and Cleary (2006) state that self-regulation is the combination of ideas, feelings, and actions that the individual produced and planned to achieve a specific purpose. Pintrich (2004) defines self-regulation as a process in which learners are active participants in the learning process, can determine their

goals and strategies, monitor and control their motivation and behavior. Steffens (2006) defines self-regulation in three steps: planning learning activities; realization and observation of learning activities; evaluation of the results of learning activities. From the above definitions, observing, controlling and evaluating the activities the student has made to achieve the goal in the learning process is an indication that he or she has the ability to self-regulation.

Learning based on self-regulation, in which learners actively participate in the learning process and organizes their learning according to their needs, is defined as emotions, thoughts, and actions put forward to achieve a specific academic goal (Zimmerman, 2000). It is necessary to train individuals who take responsibility for writing education, who can control their writing processes and actively participate in these processes, who are confident in their abilities and use these abilities positively. One of the fundamental elements in achieving this goal is learning based on self-regulation (Ozbay and Dasoz, 2016).

Learning based on self-regulation can be thought of as taking responsibility for one's learning process and designing the learning process accordingly to his own needs and necessities. It can be said here that person takes full responsibility for his learning process and has actively planned the learning process. In addition, the person's belief is also an important factor in learning on self-regulation. Studies show that cognitive and motivational factors play a significant role in self-regulation skills (Pintrich, 2004; Zimmerman, 2008; Schunk and Zimmerman, 2007). Students with self-regulation skills are highly motivated and interested in learning because they have a strong faith in themselves that they can provide their personal development.

Today, access to information is facilitated by improvements in technology, but the rapid change of information has led to the problem of determining whether the information is reliable or not. It is necessary to have high-level thinking skills such as critical thinking, creative thinking, and problem-solving to overcome this problem. It can be said that the students with self-regulation skills have a higher level of thinking skills. As a matter of fact, studies on this subject reveal that there is a high level of correlation between self-regulation skills and high-level thinking skills and that learning based on self-regulation has positive effects on high-level thinking skills of students (Arslan, 2014; Canca, 2005; Ciftci, 2012; Oruc, 2012; Vandevelde et al., 2011). Nowadays, it is necessary to educate individuals who can take responsibility for their learning and who can determine and update the learning process according to their needs. This situation makes it essential to benefit from learning based on self-regulation. At the same time, a person with self-regulation skills is an active problem solver and aims to improve his performance and skills (Nami et al., 2012).

1.2 Purpose of the Research

The main purpose of this study is to examine the relationship between the spiritual intelligence characteristics and self-regulation skills of the Education Faculty students. The sub-problems of the research are listed below:

1. Do the intelligence characteristics and self-regulation skills of the students differ by gender?

2. Do the intelligence characteristics and self-regulation skills of the students differ by place of residence?

3. Is there a relationship between the academic achievement of the students and their spiritual intelligence characteristics and self-regulation skills?

2. Method

2.1 Research Model

The relational screening model from quantitative research method was used in this study, which aims to examine the spiritual intelligence characteristics and self-regulation skills of the education faculty students by gender, place of residence, and academic achievement. Relational screening models are research models aimed at determining the presence and/or extent of change between two or more variables (Karasar, 2005: 81).

2.2 Study Group

While the target population of the research is formed by the students of the Education Faculty, the study population constitutes the students studying at the Ahi Evran University Faculty of Education. The study was conducted with 606 teacher candidates selected with stratified sampling among approximately 2000 teacher candidates studying at Ahi Evran University Faculty of Education during the fall semester of the 2017-2018 academic year. Stratified sampling is a sampling method that determines the subgroups in the population and allows them to be represented in the sample with their proportions within the population size (Buyukozturk et al., 2015: 87). When the individuals in the population are selected randomly, the characteristic proportions in the population may be same in the sample, or they may be different; stratification assures representation in this regard (Creswell, 2014: 159). Stratified sampling was carried out to ensure that students have been represented equally in the department and class level variables they have studied.

In determining the sample size of the study, p = 0,05 and q = 0,05 were arranged at z = 2 confidence level for ±5% sensitivity, and the following formula was used in the calculation of sufficient sample (Balci, 2009):

$$n = \frac{N \times z^2 \times p \times q}{N \times d^2 + z^2 \times p \times q}$$

It can be said that the sample size will be sufficient to interpret the findings in the 95% confidence interval (p <0.05) judging from the measurement tool used in the research (Fraenkel et al., 2012). Besides, 151 of the study group are the 1st class, 163 are the 2nd class, 156 are the 3rd class, and 136 are the 4th class students. There were 115 students from the Turkish Language Department, 134 students from the Guidance and Psychological Counseling Department, 135 from the Elementary Teaching Department, 119 from the Science Department, and 103 from the Social Studies Teaching Department. There are also 254 males and 352 females in the study group.

2.3 Data Collection Tools

The data required for the research were collected through a personal information form, the Spiritual Intelligence Scale, and the Self-Regulation Scale.

Personal Information Form: It is composed of five questions and is prepared to collect the data related to the independent variables of the research.

Spiritual Intelligence Scale: It is a five-point Likert type scale with 26 items collected under 5 factors developed by Karadeniz and Aydin (2016). The first factor of "the ability to understand the spiritual/moral dimension of life" consists of 8 items, the second factor of metaphysical awareness sub-dimension consists of 6 items, the third factor of entering into higher consciousness and awareness situations subdimension consists of 5 items, the fourth factor of awareness sub-dimension and the fifth factor of personal meaning production subdimension consists of 3 items. When giving these names to the factors, literature review and expert opinions were effective. (1) always, (2) often, (3) sometimes, (4) rarely, and (5) never options were placed against the items in the scale.

The Spiritual Intelligence Scale has been applied to 257 university students apart from the sample for the determination of model fit. Model fit values were tested by confirmatory factor analysis by the researcher. The results obtained are as follows: x2/df= 2,32; RMSEA= 0,085; SRMR= 0,086; GFI= 0,89; AGFI= 0,89; CFI= 0,96; IFI= 0,94 and NNFI= 0,97. In addition, the internal consistency level of the scale was determined by Cronbach's Alpha coefficient, and calculated as α=,927.

Self-Regulation Scale: Self-Regulation Scale developed by Brown, Miller, and Lawendowski (1999) to measure behavioral self-regulation was adapted to Turkish by Aydin et al. (2014). The scale consists of three factors and 51 items. The first factor of self-reinforcement consists of 29 items, the second factor of self-monitoring consists of 18 items, and the third factor of self-regulation consists of 4 items. The Self-Regulation Scale was applied to 321 university students apart from the sample for the determination of model fit. Model fit values were tested by confirmatory factor analysis by the researcher. The results obtained are as follows: x2/df= 1,93; RMSEA= 0,072; SRMR= 0,065; GFI= 0,88; AGFI= 0,89; CFI= 0,94; IFI= 0,93 and NNFI= 0,95. In addition, the internal consistency level of the scale was determined by Cronbach's Alpha coefficient, and calculated as α=,831.

When the results of the confirmatory factor analysis on the measurement tools are examined, it is seen that these model fit values are acceptable (Joreskog and Sorbom, 1993: 123; Raykov and Marcoulides, 2006: 43).

2.4 Data Analysis

To determine the statistical method to be used in the study, the normal distribution of the data was examined. The Kolmogorov-Smirnov normal distribution test was performed because the data number was greater than 50 for testing the normal distribution of the data (Wright, 2006: 94). As a result of the normal distribution test, it was concluded that the significance value was greater than 0.05, and it was decided that the data were normally distributed considering the kurtosis and skewness coefficients, and histogram graph. Independent t-test was used to determine the relationship between spiritual intelligence characteristics and self-regulation skills of the Education Faculty and gender variable, and the one-factor ANOVA test and the Scheffe test, when needed, were used for the variables such as class level, the department they studied, place of residence they live. Pearson Moment-Product Correlation Coefficient (r) was calculated to calculate the relationship between the students' spiritual intelligence levels and self-regulatory skills and academic achievement.

When evaluating the arithmetic mean values of the students' spiritual intelligence characteristics and self-regulation skills, in determining the group value range of the scale, the 'a = Range / Group Number to be made' formula is used (Tasdemir, 2003). Accordingly, the range of values is as follows: always 4.20-5.00, often 3.40-4.19, sometimes 2.60-3.39, rarely 1.80-2.59, never 1.00-1.79.

The IBM SPSS 20 program was used in the data analysis, and the LISREL 8.80 program was used in confirmatory factor analysis of the Spiritual Intelligence Scale and Self-Regulation Scale. A 0.05 level of significance was sought in interpreting the data.

3. Results

In this section, the findings based on the data collected for the subproblems of the research are highlighted. Table 1 shows the results of the independent t-test analysis scores between their spiritual intelligence characteristics and self-regulation skills of the students by students' gender:

Table 1. Independent t-test analysis results of the spiritual intelligence characteristics and self-regulation scale means by gender

Spiritual Intelligence	Gender	n	$\bar{x}$	Ss	T	p
	Male	254	3.98	. 495	.707	.480
	Female	352	4.04	. 567		
Self-Regulation	Gender	n	$\bar{x}$	Ss	T	p
	Male	254	3.54	.365	1.556	.119
	Female	352	3.63	.325		

When Table 3 is examined, it is seen that the students' spiritual intelligence characteristics and self-regulation scale means do not differ statistically by gender (p>0,05). Table 2 shows the results of the one-factor ANOVA scores of the students from the spiritual intelligence scale by the place of residence.

Table 2. Mean, standard deviation, and one-way analysis of variance (ANOVA) results of the students' spiritual intelligence characteristics scale scores by the place of residence

Variable	Place of Residence	n	$\bar{X}$	Ss			
Place of Residence They Live	Metropolis	175	3.82	.427			
	City	253	3.80	.443			
	District	106	3.77	.459			
	Town	25	3.76	.385			
	Village	47	3.81	.402			
	Source of Variance	Sum of Square	Sd	Mean Square	F	p	Significant Difference
	Between groups	.254	4	.063	.333	.856	-
	In-group	136.290	602	.190			
	Total	136.544	606				

In Table 2, it is seen that the spiritual intelligence characteristics of the students did not differ significantly by the place of residence (p> 0.05). This result shows that the spiritual intelligence characteristics of the students do not differ by the place of residence. Table 3 shows the results of the one-factor ANOVA scores of the students on the self-regulation scale by the place of residence.

Table 3. Mean, standard deviation, and one-way analysis of variance (ANOVA) results of the students' self-regulation scale scores by the place of residence

Variable	Place of Residence	N	$\bar{X}$	Ss			
Place of Residence They Live	Metropolis	175	3.56	.399			
	City	253	3.61	.370			
	District	106	3.48	.344			
	Town	25	3.69	.208			
	Village	47	3.57	.354			
	Source of Variance	Sum of Square	Sd	Mean Square	F	p	Significant Difference
	Between groups	.937	4	.312	2.553	.057	
	In-group	21.785	602	.122			-
	Total	22.722	6060				

Table 3 shows that the self-regulation skills of the students did not differ significantly by the place of residence (p> 0.05). This result shows that students do not differ in their self-regulatory skills by the place of residence. In Table 4, there are statistical values between students' spiritual intelligence characteristics, self-regulation scale means and academic achievement.

Table 4. Correlation chart between spiritual intelligence characteristics and academic achievement

		Spiritual Intelligence Characteristics	Self-Regulation	Academic Achievement
Spiritual Intelligence Characteristics	r	1	.212*	.041
	p		.013	.586
Self-Regulation	r	.212*	1	.011
	p	.013		.880
Academic Achievement	r	.041	.011	1
	p	.586	.880	

*. Correlation is significant at 0.05 level. n=606

**. Correlation is significant at 0.01 level.

When Table 3 is examined, it is seen that there is a low level of meaningful relationship between spiritual intelligence characteristics and self-regulation skills. (r = .128, p<.01). It indicates that there is a partial relationship between the students' spiritual intelligence characteristics and their academic achievement. On the other hand, there is no relationship between spiritual intelligence and self-regulation and self-regulation and academic achievement.

4. Conclusion and Discussion

The results of this study, which aims to examine the spiritual intelligence characteristics and self-regulation skills of students by various variables, are discussed below.

When examining the scores of the Education Faculty students for their Spiritual Intelligence Characteristics and the Self-Regulation Scales by gender variable, the difference was not statistically significant (p>0,05). This result shows that the spiritual intelligence characteristics and self-regulation skills do not differ by gender.

In his study on 540 of 10th-grade students, Ustten (2008) reached the conclusion that female students are more advanced in their ability to use spiritual intelligence than male students. Kilcup (2014) also indicates that spiritual intelligence characteristics of females are higher than males. Amram and Dryer (2008) have also found that adult women have higher levels of spiritual intelligence than men. On the other hand, King and DeCicco (2009), Cat (2014), Smartt (2014) and Karadeniz (2017) have reached a conclusion that spiritual intelligence characteristics do not differ significantly by gender.

The spiritual intelligence and self-regulating skills of students did not differ significantly by the place of residence. This situation shows that the place of residence of the students does not affect these characteristics.

When examining the relationship between spiritual intelligence characteristics and self-regulation skills, it is seen that there is a low-level and meaningful relationship (r =, 212, p<, 01). In the Karadeniz's (2017) study, it was concluded that there was a low level of relationship between spiritual intelligence and self-regulation skills. Another result of the research is that there is no relationship between spiritual intelligence characteristics and self-regulation skills of the students and academic achievement.

As a conclusion, if it is considered that the spiritual intelligence is a new study field, it is necessary to investigate the relationship between the variables that can be related to the spiritual intelligence. For instance, the relationship between the characteristics of the spiritual intelligence and intelligence areas of the students in the multiple intelligence theory can be investigated. Within this context, the question whether an individual with mathematical intelligence or an individual with verbal intelligence has a higher spiritual intelligence can be a study subject. Along with this, the relationship between the rational intelligence and emotional intelligence and the spiritual intelligence can be investigated.

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