Predictive Relationships between Secondary School Students’ Human Values, Motivational Beliefs, and Self-Regulated Learning Strategies

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Abstract
The purpose of this study was to investigate the exploratory and predictive relationships between secondary school students’ human values and their motivational beliefs and self-regulated learning strategies and thus to test the relevant model was developed. A correlational field study was used in this research. The sample of the research consisted of a total of 794 students studying at six different secondary schools in Istanbul. Research data were collected by “Human Values Scale” and the “Motivated Strategies for Learning Questionnaire”. The exploratory relationships between secondary school students’ human values, motivational beliefs, and self-regulated learning strategies were analyzed using the software AMOS 16 following the “Structural Equation Modelling”. Results indicated that human values were significant predictor of motivational beliefs and motivational beliefs were significant predictor of self-regulated learning strategies. Also, the study results indicated that human values were not significant predictor of self-regulated learning strategies, but had an indirect effect on self-regulated learning via motivational beliefs. These results revealed that the values were important variables that affect on students’ learning and motivation

Key Words

In the past few years, the concept of self-regulated learning has been the focus of education research and applications. The main reason for this is because self-regulated learning is an important variable affecting academic performance and success in class (Pintrich & De Groot, 1990). According to Zimmerman (2002), the success of students can be explained by their being active in their learning cognitively, motivationally and behaviorally. In this process however, the role of utilization capacity of self-regulation strategies and motivational beliefs, both of which form the dimensions of self-regulated learning is important. Research results put forth that despite their emphasis on the importance of developing students’ self-regulation skills, few teachers encourage their students to be active in their learning (Zimmerman, Bonner, & Kovach, 1996).

Effeney (2011) stresses in his study that motivation decreases with age and that this causes negative effects on self-regulation especially in the adolescence period. Since adolescence, which is one of the important stages of development, is associated with many emotional and behavioral difficulties (Celik, Tahiroglu, & Avci, 2008), it is thought that conducting research for the development of students’ self-regulation especially in this phase is important. For this purpose, in order to increase

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students’ learning capacity, it is possible to say that the determination of individual factors which may affect their self-regulated learning is important. In their study on adolescents, Pintrich, Roesser, and De Groot (1994) establish that the individual differences between students are influential on self-regulation strategies and motivational beliefs. It is thought that values are one of the individual factors which may be influential on students’ motivational beliefs and self-regulation strategies. This is because the adolescent phase is a phase during which individuals become aware of their personal values. The need to pass on values by allowing adolescents to see the inconsistencies in their ideas and the disagreements between their ideas is emphasized. In this sense, it is stated that the most significant moral behavioral characteristic of the adolescent phase is self-direction skills (Koç, 2004). However, the absence in books and articles of a research putting forth the relations between the values directing the individual’s behaviors and the motivational strategies and self-regulation, which are the determinant of success, draw attention. It is thought that emphasizing the role of values in students’ self-regulated learning will make significant contributions to increasing students’ success. The purpose of this study is to explore the exploratory and predictive relationships between secondary school students’ human values and their motivational beliefs and self-regulated learning strategies and thus to test the relevant model developed.

Human Values

Human beings use certain criteria to make sense of the objects in their surroundings. These criteria are sometimes a product of the sense organs and at other times of the emotions. The individual uses the properties obtained via sense organs to define the objects and his/her emotional impressions to value and to appraise the object. These emotional impressions are generally called “values” (Yeşil & Aydın, 2007). It is highly difficult to define the concept of value because it has been studied in many disciplines and many theorists have tried to explain the concept by relating it to various other concepts (Dilmaç, 2007; Dilmaç, Kulaksızoğlu, & Ekşi, 2007). Dunlop (1996) briefly defined the concept of value as qualities of objects. The identification of objects, on the other hand, materializes through individuals’ positive or negative experiences of the world and the things that constitute the world from a variety of perspectives. Values that originate from experiences direct individuals to realize an action, guide behavior and act as criteria in the evaluation of events as to whether they are appropriate or not (Halstead, 1996; Uysal, 2008). The criteria direct individuals’ tendencies to prefer one situation over another. Therefore, they are the basis of behavior and are used to judge behavior (Uysal). Likewise, Nesbitt and Henderson (2003), Shaver and Strong (1976) also define values as principles that affirm what is good and what is bad. According to Warnock (1996), values are things that are either embraced or not by the society and the individuals. And according to Shearman (2008), values are our individual or social beliefs that guide our preferences consciously or unconsciously, verbally or symbolically and that act as criteria for our cognitive, affective and behavioral judgments. Thus, while values influence societies, societies also have the power to influence values (Shearman). Through values individuals’ perspective takes shape, the society stays together and the continuity of the culture is ensured (Sığrı, Tabak, & Ercan, 2009).

Motivational Beliefs

Motivational beliefs are related to students’ beliefs, ideas and value judgments in relation to objects, events or the discipline (Boekaerts, 2002). The conceptual framework of motivational beliefs, which are highly important in the process of the organization of learning, is based on an adaptation of the general expectation-value model of motivation. Advocates of this model, Wigfield and Eccles (2000) suggest that students’ beliefs in relation to how good they are at doing an activity and the value they attach to the activity could influence their individual preferences, their perseverance towards doing the activity and their performance. According to the expectation-value model of motivation, three motivational components can be listed in relation to self-regulated learning strategies. The first is the value component that includes learner aims and learner beliefs about the importance of the task to be completed and it is expressed with various concepts (learner aims, intrinsic orientation, value attached to the task, intrinsic values). The second component is the expectation referred to as self-efficacy, which includes learners’ beliefs about their performance ability in relation to a task. And the third is the affective component that consists of learners’ emotional reactions about the task at hand (Pintrich & De Groot, 1990; VanZile-Tamsen, 2002). A learner’s high level of value judgment and expectation that she or he will be successful is positively related to all kinds of success behavior (Eaton & Dembo, 1997; Sharp, 2002).
Self-regulated Learning Strategies

The theoretical foundations of self-regulated learning in learning lie in Bandura's socio-cognitive learning, Piaget's cognitive constructivist and Vygotsky's social constructivist learning approaches (Jarvela & Niemivirta, 1999). Most studies in the literature on the models in relation to the theory of learning based on self-regulated learning (Boekaerts, 1996; Borkowski, 1996; Winne & Hadwin, 1998; Pintrich, 2000; Zimmerman, 1998) are underpinned by Bandura's theory of socio-cognitive learning. According to the Socio-Cognitive theory, people should not be perceived as reactional organisms but as self-organizational, active, self-reflective and self-regulative beings (Bandura, 1997). Therefore, the functions of an individual are a product of the mutual interaction among personal, behavioral and environmental factors (Pajares, 2002). Proponents of the socio-cognitive theory argue that self-regulated learning plays an active role on learners' learning processes behaviorally, cognitively and motivationally (Zimmerman, 1989; Zimmerman & Martinez-Pons, 1988). According to Pintrich (2000, p. 453), self-regulated learning is "an active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment". During this process, behaviorally, learners choose the best learning environment and use time efficiently; while cognitively they plan as they learn, identify goals, monitor themselves and do self-evaluations. Motivationally, they have a high level of self-efficacy beliefs and they value the task they have accomplished highly (Rizemberg & Zimmerman, 1992; Zimmerman, 1990).

Learners regulate their learning processes using various self-regulated learning strategies. Self-regulated learning strategies are the tasks learners undertake in order to acquire the information or skills they believe will be beneficial (Zimmerman, 1989, 1990). These tasks are self-regulation which includes meta-cognitive strategies for planning, monitoring and altering cognition, learners' effort management in order to fulfill an academic task in class and cognitive strategies such as rehearsal, elaboration and organization used in order to learn, remember and understand (Pintrich & De Groot, 1990).

The Relationship between Human Values, Motivational Beliefs and Self-regulated Learning Strategies

Values are individual or social beliefs we have as criteria for our cognitive, affective and behavioral judgments that guide our preferences consciously or unconsciously, verbally or symbolically (Kuşdil & Kağıtçibaşı, 2000). Social scientists emphasize that values are crucially important in explaining human behavior and closely related to people's existing or retrieved behavior. Hence, values are criteria for individuals' thinking, attitude, behavior and work and constitute an inseparable element of social integrity (Dunlop, 1996; Durmuş, 1996). In this regard, values can be said to shape the motivational and cognitive elements of the learning process. Snyder (1997) states that individuals' value judgments and their confidence in themselves are influential on their learning motivation and interest in the subject matter to be learnt. Students' academic performance in class and their perspective and beliefs about cognitive activities are the most important resources that facilitate learners' motivation. The basis of these resources is the learners' beliefs in relation to how good they are in fulfilling an activity and their value judgment about the activity. These values and expectations are highly influential on the self-regulated learning strategies learners' use, individual preferences and their perseverance and performance towards completing the activity (Eaton & Dembo, 1997; Pintrich & De Groot, 1990; Sharp, 2002; Wigfield & Ecless, 2000).

Method

The survey model was used in this study. Relational survey model is used to identify the relationship between two or more variables and to gain insight into cause-effect relationships (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz, & Demirel, 2008). This study investigated predictive relationships among secondary school students' human values, motivational values and self-regulated learning strategies.

Sample

The sample of the research was a total of 794 students studying at six different secondary schools in Istanbul. 387 of the students were girls, while 407 were boys. 326 of the students were 9th; 161 of the students were 10th; 153 of the students were 11th and 154 of the students were 12th grades of secondary schools.
Data Collection

Research data were collected using the “Human Values Scale” and the “Motivated Strategies for Learning Questionnaire”. The instruments were administered to sample by the researchers in the spring term of the academic year 2010-2011.

Human Values Scale (HVS): In order to identify learners’ human values the “Human Values Scale (HVS)” developed by Dilmaç (2007) for secondary school students (adolescents). The scale measures the process of human values with a total of 42 items categorized under six factors; a. Responsibility (7 items) b. Friendship (7 items) c. Reconciliation (7 items), d. Respect (7 items), e. Tolerance (7 items), f. Honesty (7 items). It is a Likert type scale which can be administered individually or in groups. The scale items are measured on a five-point “Likert Type” (A: Never, B: Rarely, C: Sometimes, D: Often, E: Always). The items were scored as A:1- B:2- C:3- D:4- E:5. The increase/decrease in the scores indicated that the individuals did not have higher human values.

Internal consistency coefficients (Cronbach’s Alpha) were calculated in order to test the reliability of the HVS. Internal consistency coefficient of the factor “Responsibility”, which consisted of 7 items, was alpha: .73. Internal consistency coefficient of the factor “Friendship”, which consisted of 7 items, was alpha: .69. Internal consistency coefficient of the factor “Reconciliation”, which consisted of 7 items, was alpha: .65. Internal consistency coefficient of the factor “Respect”, which consisted of 7 items, was alpha: .67. Internal consistency coefficient of the factor “Honesty”, which consisted of 7 items, was alpha: .69. Internal consistency coefficient of the factor “Tolerance”, which consisted of 7 items, was alpha: .70 and the internal consistency coefficient of the full scale of 42 items was alpha .92. The determination coefficients were .73 for “Responsibility”; .91 for “Friendship”; .80 for “Reconciliation”; .88 for “Respect”; .75 for “Honesty” and .79 for “Tolerance”. The determination coefficient of the full scale was calculated to be .87 (Dilmaç, 2007).

Motivated Strategies for Learning Questionnaire: Students’ self-regulated learning strategies and motivational beliefs in the study were measured using a 44-item “Motivated Strategies for Learning Questionnaire” which was developed by Pintrich and De Groot (1990) and translated into Turkish by Üredi (2005). Questionnaire responses were elicited on a seven-point scale between very true of me and not at all true of me.

The questionnaire consists of two factors, which are self-regulated learning strategies and motivational beliefs. Self-regulated learning strategies include two dimensions: use of cognitive strategies (13 items) and self-regulation (9 items) and motivational beliefs include three dimensions: self-efficacy (9 items), intrinsic values (9 items) and test anxiety (4 items). The questionnaire measures rehearsal, elaboration and organization strategies under cognitive strategies, and meta-cognitive strategies such as planning, monitoring, revising as well as effort management strategies under the self-regulation dimension. Self-efficacy dimension of the motivational beliefs factor measures perceived efficacy and confidence in relation to class performance; intrinsic values dimension measures intrinsic interest, perception of the importance of class work and internal goal orientation; and test anxiety scale measures the level of anxiety toward exams. Cronbach’s alpha calculations for the adapted questionnaire into Turkish were .84 for self-regulated learning, .92 for self-efficacy, .88 for intrinsic values, and .81 for test anxiety dimensions (Üredi, 2005).

Data Analysis

Secondary school students’ human values, motivational beliefs and self-regulated learning strategies and the relationships among these were analyzed using the software AMOS 16 following the “Structural Equation Modelling”. Structural equation modelling is a statistical approach that identifies causal and mutual relationships between observed and latent variables in order to test a theoretical model (Schumacker & Lomax, 2004).

The hypotheses of the study were as follows:
H1: Human values are a significant predictor of motivational beliefs.
H2: Human values are a significant predictor of self-regulated learning strategies.
H3: Motivational beliefs are a significant predictor of self-regulated learning strategies.

Results

One way of testing whether the hypotheses are compatible to the model is the chi-square (c²), goodness-of-fit index (c²=183,12, df=41 p=.000). It is stated that for an acceptable model, the obtained value of chi-square divided by degree of freedom should be equal to or less than five
The value obtained in this work ($c^2/s.d=4.46$) meets this requirement. If the significance value related to $c^2$ is bigger than .05, then this suggests that the model is compatible with the main mass covariance matrix (Schermelleh-Engel, Moosburger, & Müller, 2003). In this study, a chi-square index significant at $p<.01$ indicated that the model was not compatible. However, one of the important assumptions of the $c^2$ goodness-of-fit index is that the sample should be big enough. In many studies this assumption may not always be met (Schermelleh-Engel et al.). The sensitivity of the $c^2$ test for sample size requires an evaluation of alternative goodness-of-fit measures (Yılmaz & Çelik, 2009).

Various goodness of fit indices are used to evaluate model fitness and these indices have certain statistical functions. Results revealed that the goodness-of-fit indices in relation to the initial model were RMSEA=.06 (>0.05), NFI=.93 (>0.90), CFI=.944 (>0.95), AGFI=.93 and GFI=.96. The CFI value was at the border of the acceptable range of values. Goodness-of-fit indices obtained from the model indicated that the results were acceptable and the initial model was a compatible model (Schermelleh-Engel et al. 2003)

Correlation and regression values among the variables of the model showed that the correlation between students’ human values and motivational beliefs was .54, the regression interval for how well human values predicted motivational beliefs was .29, and these values were significant at $p<.01$. Likewise, the correlation between motivational values and self-regulated learning strategies was .82, the regression weight for how well motivational beliefs predicted self-regulated learning strategies was .72, and these values were significant at $p<.01$. Data revealed that there was no significant relationship between human values and self-regulated learning strategies. Because the initial model was significant as a whole, the insignificant one-way prediction arrow between human values and self-regulated learning strategies was removed from the model and goodness-of-fit indices as well as significance relationships were calculated again. During this process, the indirect effect of human values on learning strategies via motivational beliefs was explored.

A comparison between the goodness-of-fit index values obtained from the final model and the standard values suggested that the model results were acceptable. It is calculated $c^2 = 184,581; df=42, p=.000$ at the suggested model. Since it is $c2/sd=4.40$ which is less than five, it is at the acceptable level. The results of the suggested model were $c^2=184,581; df=42, p=.000$. The outcome was in parallel with the findings of the initial model. Other indices which indicated fitness of the model were RMSEA=.065 (>0.05), NFI=.929 (>0.90), and CFI=.944 (>0.95) which meant the model's fitness was acceptable; and the values AGFI=.935 (>0.90) and GFI=.959 (>0.95) meant that the model’s fitness was good. According to regression values, human values were a significant predictor of motivational values at $p<0.01$ with a predictive power of .355. Likewise, motivational beliefs were a significant predictor of self-regulated learning strategies at $p<0.01$ with a predictive power of .73. The power of human values to predict self-regulated learning strategies via motivation was .35.

**Discussion**

The findings of this study revealed that human values were a statistically significant predictor of motivational beliefs. Therefore, responsibility, friendship, reconciliation, respect, tolerance and honesty which make up human values had a positive effect on the motivational aspects of learning, i.e. intrinsic values, self-efficacy and test anxiety. Values constitute a significant element of the learning process as they target the affective and an attitude change in the learner. It is crucial for the learner to internalize the experiences gained during the process of acquiring affective qualities such as responsibility, friendship, respect, and tolerance, etc. This process of internalization can take place through the processes of adoption, appropriation and of ownership of knowledge (Yılmaz, 2007). Similarly, in the process of internalizing learning, the learner is expected to feel himself/herself involved in a subject with concerns such as challenge, curiosity and whole learning, and to have a value judgment that learning is important (Pintrich & De Groot, 1990; Pintrich, Smith, Garcia, & Mc Keachie, 1991). Snyder (1997) stated that individuals’ value judgments and their self-confidence are influential on their learning motivation and their interest in the topic. Accordingly, this study also revealed that human values are a significant predictor of motivational beliefs.

Despite a lack of research specifically in the relationship between human values and self-regulated learning strategies in the literature, studies exist which explore the relationship between human values and learning styles, which are the basis of self-regulated learning. Matthews (2001), Dil-
maç, Ertekin, and Yazıcı (2009) found significant relationships between values and learning styles. Learning styles is a concept related to how individuals learn, how they solve problems, how they study and their role in activities, and how they interact with others in the learning process (Renzulli, 1996). It is important for the learner to know his/her learning style in the learning process in order to internalize and interpret information and to convert it into behavior (Yılmaz, 2007). Boekaerts (1999) emphasizes that learning styles are one of the foundational elements of self-regulated learning and motivational beliefs and stated that there is an important relationship between self-regulated learning strategies and learning styles. Another study that indirectly indicates the relationship between values and self-regulated learning is conducted by Magno (2009). Magno includes a responsibility factor to the “Academic Self-regulation Questionnaire” developed to assess students’ self-regulated learning strategies and found that responsibility for task completion was related to self-regulated learning strategies such as memory strategies, goal-setting, self-evaluation, seeking assistance, environmental structuring and organizing.

Another finding of this study indicated that human values were not a significant predictor of self-regulated learning strategies, but had an indirect effect on self-regulated learning via motivational beliefs. Motivational beliefs are resources that motivate learners to use learning strategies (Pintrich & DeGroot, 1990). Pintrich’s (2000) self-regulated learning model, which was the basis of this study, integrates motivational elements of learning and self-regulated learning strategies. Intrinsic value, test anxiety and perception of self-efficacy constitute the motivational elements of learning, while self-regulated learning strategies, which are rehearsal, elaboration, organisation, planning, monitoring and revising comprise the cognitive elements (Pintrich & DeGroot). As both motivational beliefs and values variables have an affective quality, a significant relationship between the two is assumed. Moreover, several studies reveal significant relationships between motivational beliefs and self-regulated learning strategies (Pintrich & De Groot; Whaw & Abrami, 2002; Wigfield & Eccles, 2000; Wolters, Yu, & Pintrich, 2002). Therefore, in the present study, human values, which is an affective quality, was observed to have an indirect effect on self-regulated learning strategies via motivational beliefs.

Moral development is a phase which expresses the formation of the values system that an individual has. In this phase, young people are influenced both by personal and social characteristics in the process of acquiring societal values (Avcı, 2006). In this context, it is emphasized that students in the adolescent phase may acquire traits such as adaptive, obedient, maladaptive, and intractable during the moral development process. However, it is stated that the most significant moral behavioral pattern of the adolescent period is the self-direction skill (Koç, 2004). It is thought that for adolescents to internalize values such as assuming responsibilities, friendship, being peaceful, respect, tolerance and honesty, the learning and teaching process shall be built on these values. It is possible to say that adolescents will establish the self-control in their behavior by means of values internalized in such ways.

Given that self-regulated learning is a crucial determiner of academic success, as a variable that predicts self-regulated learning and motivational beliefs, educational programs should attach more importance to values education. Furthermore, more studies that explore the relationship between values and academic success as well as factors that determine academic success can increase the importance of values education.

References/Kaynakça


