

*Full Length Research Paper*

# The relationships between self leadership and critical thinking

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The aim of this research is to address general relationships between self leadership and critical thinking as well as relationships with the sub dimensions. Survey method was used in the research. The population included 450 students in Firat University (of Turkey) attending pedagogical formation program for being teachers in secondary schools. The study sample comprised of 386 students selected among those students on a random basis. The proportion of the study sample to the population is 85.78%. Two scales were applied to the students at the same time. One of them is self leadership scale. The other scale used in the study is the critical thinking scale. Of the 386 students participating in the study, 221 are males (57.3%) and 165 are female (42.7%). There is a correlation of 0.41 between critical thinking and self leadership. According to the results of multiple regression analysis held between sub dimensions of self leadership and critical thinking, regression equality regarding prediction of critical thinking (mathematical model) is as follows:  $\text{Critical thinking} = 2.856 - 0.030 \text{ natural prize strategies} - 0.337 \text{ behavior-oriented strategies} - 0.231 \text{ constructive thinking model strategies} + 0.957 \text{ general self leadership}$ .

**Key words:** Self-leadership, critical thinking, student.

## INTRODUCTION

Real leaders are those who lead the others to be their own leaders. In this sense, the phenomenon of self leadership is of great importance (Manz and Sims, 1991: 18). The phenomenon, self leadership emerged as an extension of the concept of self management (Manz and Sims, 1980) based on the self control theory inspired by Kerr and Jermier's (1978:376-400) substitutes for leadership. Self leadership has been defined as "the influence we exert on ourselves to achieve self motivation and self-direction we need to perform" (Manz and Sims, 1991: 23).

Self-leadership, "while related to and sometimes predicated upon similar psychological processes is a unique concept that may be distinguished from other concepts" (Neck and Houghton, 2006: 283). Self-leadership draws from the foundation of well-established theories and "comprises specific sets of behavioral and cognitive strategies designed to shape individual performance outcomes" (Houghton and Neck, 2002: 672).

However, one study specifically stressed influences of self-management leader behaviour on job satisfaction. Cohen et al. (1996: 660-665) found that the Manz and

Sims (1987) self-management leader behaviours (self-management, self-rehearsal and self-criticism) had a positive influence on overall job satisfaction (average correlation  $r = 0.28$ ;  $p < 0.01$ ). But Manz and Sims' (1987:122-124) self-management scales include certain themes, such as encouraging self-observation, encouraging self-goal setting, encouraging rehearsal and reducing habitual self-punishment patterns, common to those measured by Manz's (1992: 24-36) self-leadership behavioural-oriented strategies.

An increasing amount of evidence shows a positive correlation between self-leadership and work outcome. In spite of this evidence, the relationship between self-leadership and innovative behavior needs further investigation. To the best of our knowledge, only Phelan and Young (2003: 270-276) particularly mentioned creative self-leadership, referring to a reflective internal process by which an individual consciously and constructively navigates her or his thoughts and intentions towards the creation of desired changes, improvements and innovations. They found a significant relationship between creative self-leadership and creativity.

The general self-leadership overall measure was significantly and positively correlated to the self-leadership (behavior-oriented strategies) ( $r = 0.96, p < 0.01$ ), self-leadership (natural reward-focused) ( $r = 0.76, p < 0.01$ ), self-leadership (constructive thought-focused strategies) ( $r = 0.92, p < 0.01$ ). (Carmeli et al., 2006: 83-84).

Behavior-oriented strategies are those strategies that are beneficial in doing necessary but not difficult tasks. Those strategies are quite effective in reaching individual perfection. Such strategies deal with behaviors related with the tasks which are not pleasing still need to be overcome by addressing. Natural prize strategies are founded on disclosing pleasing aspects of a task or activity assigned. This case is expected to motivate or award the individual. Constructive thought model strategies apply to creating and maintaining the functional model of the accustomed thought. By forming up constructive thought models, performance can be affected in a positive way. There are significant differences between general self leadership and its sub dimensions such as behavior-oriented thought model strategies, natural prize and constructive thought model strategies. Hence, critical thinking is needed for an individual's developing self leadership strategies.

Critical thinking is a comparable reflective thinking focused on deciding what the individual believes or s/he is supposed to do (Ennis, 1986:10). It is one of the objectives of education that students obtain critical thinking skills enabling easy access to knowledge and overcoming challenges more easily (Hudgins and Edelman, 1988: 262; Halpern, 1993: 238). Critical thinking can be taught to human beings at all ages (Demirel, 1999: 214).

There are many studies seeking correlation with critical thinking. There is a positive correlation between critical thinking and speed of reading ( $r = 0.19, p < 0.05$ ) (Semerci, 2002:1). In the Elam's (2001) research, there was a statistically significant difference between the critical thinking tendencies and grades of the students. Sánchez (1993) found that all seven of The California Critical Thinking Disposition Inventory (CCTDI) scales were positively correlated with a measure of ego-resiliency. The highest correlates were with systematicity ( $r = 0.47, N = 200, p < 0.001$ ), truth-seeking ( $r = 0.41, N = 200, p < 0.001$ ) and inquisitiveness, ( $r = 0.39, N = 200, p < 0.001$ ) indicating that ego-resiliency was most highly associated with the focused diligence, objectivity, and intellectual curiosity of the CT cognitive style. Five of the seven scales of the CCTDI were found to share significant correlations with the openness to experience construct: Truth-Seeking ( $r = 0.27, p < 0.001$ ), Open-mindedness ( $r = 0.33, p < 0.001$ ), CT Self-Confidence ( $r = 0.25, p < 0.004$ ), Inquisitiveness ( $r = 0.37, p < 0.001$ ), and Cognitive Maturity ( $r = 0.30, p < 0.001$ ) (Sánchez, 1993).

The aim of this research is to address general relationships between self leadership and critical thinking as well as relationships with the sub dimensions. To this end, following questions were attempted to be answered:

- 1) What are the relationships between self leadership and sub dimensions of critical thinking?
- 2) Is there a relationship between self leadership and critical thinking depending on the variables of gender and discipline (Sciences/Social sciences)?
- 3) What are the overall relationships between critical thinking and behavior-oriented strategies, natural prize strategies and constructive thinking model strategies?

## METHODS

Survey method was used in the research. The population included 450 students in Firat University (of Turkey) attending pedagogical formation program for being teachers in secondary schools. The study sample comprised of 386 students was selected among those students on a random basis. The proportion of the study sample to the population is 85.78%. The implementation was undertaken in the fall academic semester of 2009 - 2010 education years. Two scales were applied to the students at the same time. One of them is self leadership scale. It was initially developed by Anderson and Prussia (1997: 120-143). Then confirmatory analysis was carried out on the same by Houghton and Neck (2002:672-692). The Self Leadership Scale was adapted to Turkish by Tabak, Sıgır and Türköz (2009).

The Self Leadership Scale is a Likert type scale with 5 steps comprised of 29 items (Frequency level; 1: Never, 2: Rarely, 3: Sometimes, 4: Usually, 5: Always). The scale has 3 dimensions and 8 sub factors. These factors are listed as Behavior-oriented Strategies (Self awarding, self punishment, self observation, clues), Natural Prize Strategies (focusing thought on natural prizes) and Constructive Thinking Model Strategies (Setting goals for her/him and dreaming successful performance, talking to her/himself, evaluating thoughts/assumptions) (Tabak et al., 2009:303-309).

The other scale used in the study is the critical thinking scale. The initial critical thinking scale (The California Critical Thinking Disposition Inventory: CCTDI) was first developed by Facione et al. (1998), and adapted to Turkish by Kökdemir (2003). Principal component analysis was applied in order to find out factor structure of the CCTDI scale. Factor load was taken as 0.32 to determine items covered by the factor, and 51 items emerged under various factors. Sub factors are as follows: (1) Analyticity, (2) Open-Mindedness, (3) Inquisitiveness, (4) Self- Confidence, (5) Truth-seeking, (6) Systematicity. Cronbach alpha coefficients of the new scale comprised of 6 dimensions and 51 items was found as 0.88. Total variance explained by the scale is 36.13% (Kökdemir, 2003).

## FINDINGS

Of the 386 students participating in the study, 221 are males (57.3%) and 165 are female (42.7%). Distribution of the participants across areas is as follows: 141 (36.5%) students were from the sciences (Mathematics, Physics, Chemistry and Biology) and 245 students (63.5%) from social sciences (Turkish language and literature, History, Geography and Philosophy group).

Most of the correlations between self leadership and sub dimensions of critical thinking skills were found positive. The highest positive correlation was found between dreaming successful performance by setting goals and inquisitiveness ( $r = 0.39, p < 0.01$ ). Another positive correlation is found between evaluating thoughts/assumptions and open-mindedness ( $r = 0.38, p < 0.01$ ).

**Table 1a.** The correlations between sub dimensions of self leadership and critical thinking skills.

	Gender	Field	Analyticity	Open-mindedness
Gender	-	-	0.11*	0.04
Field	-	-	-0.07	-0.09
Setting goals for her/ him and dreaming successful performance	0.08	0.04	0.23**	0.34**
Self awarding	0.16**	0.07	0.17**	0.19**
Self punishment	0.06	-0.08	-0.04	-0.04
Self observation	0.09	-0.04	0.26**	0.31**
Clues	0.16**	-0.12*	0.09	0.18**
Focusing thought on natural prizes	0.09	-0.05	0.17**	0.26**
Talking to her/himself	0.05	-0.04	0.05	0.09
Evaluating thoughts/ assumptions	-0.01	-0.08	0.26**	0.38**

**Table 1b.** The correlations between sub dimensions of self leadership and critical thinking skills.

	Inquisitiveness	Self-confidence	Truth-seeking	Systematicity
Gender	0.07	0.01	0.09	-0.01
Field	0.01	-0.04	0.03	0.04
Setting goals for her/ him and dreaming successful performance	0.39**	0.28**	0.26**	0.06
Self awarding	0.27**	0.18**	0.23**	0.01
Self punishment	0.11*	-0.01	0.01	0.07
Self observation	0.28**	0.34**	0.28**	0.12*
Clues	0.15**	0.11*	0.15**	0.04
Focusing thought on natural prizes	0.13**	0.17**	0.26**	-0.05
Talking to her/himself	0.06	0.07	0.09	-0.02
Evaluating thoughts/ assumptions	0.23**	0.30**	0.18**	0.10*

There are only low correlations between sub dimensions of self punishment and talking to her/himself with sub dimensions of critical thinking. Also the correlation between self punishment and open-mindedness was found low ( $r = -0.04$ ,  $p > 0.05$ ). However; there is a significant (0.05) positive relationship between self punishment and inquisitiveness ( $r = 0.11$ ,  $p < 0.05$ ).

The correlations between gender and discipline and self leadership and sub dimensions of critical thinking skills were generally found close to zero. This indicates that there is not a significant relationship. Still correlations were found between gender and analytical ( $r = 0.11$ ,  $p < 0.05$ ), gender and self awarding ( $r = 0.16$ ,  $p < 0.01$ ) and gender and clues ( $r = 0.16$ ,  $p < 0.01$ ) and discipline and clues ( $r = -0.12$ ,  $p < 0.05$ ), though low (Tables 1a and b).

The sub dimensions regarding self leadership in Tables 1a and b are dependent on certain basic factors. Behavior-oriented Strategies (Self awarding, self punishment, self observation, clues), Natural Prize Strategies (focusing thought on natural prizes) and constructive thinking model strategies (Setting goals for her/him and dreaming successful performance, talking to her/him, evaluating thoughts/ assumptions) are the basic factors. Below is result of regression analysis regarding prediction of critical thinking.

Results of the regression analysis regarding natural

prize strategy, behavior-oriented strategies, constructive thinking model strategies and prediction of critical thinking against variables of general self leadership are given in Table 2. Zero-order and partial correlations between interpreting variables and dependent (what is interpreted) variable indicate that there is a positive relationship between natural prize strategies and critical thinking lower than intermediate ( $r = 0.265$ ), still the correlation between the two variables was calculated as  $r = -0.043$  upon checking of the other variables.

It is seen that there is a positive relationship between behavior-oriented and critical thinking lower than intermediate ( $r = 0.316$ ); however, the correlation between the two variables was calculated as  $r = -0.141$  upon checking of the other variables. There is a positive relationship between constructive thinking model strategies and critical thinking lower than intermediate ( $r = 0.360$ ); however, the correlation between the two variables was calculated as  $r = -0.096$  upon checking of the other variables. There is a positive relationship between general self leadership and critical thinking at intermediate level ( $r = 0.405$ ); however, the correlation between the two variables was calculated as  $r = 0.186$  upon checking of the other variables.

There is significant relationship at intermediate level between all of natural prize strategy, behavior-oriented

**Table 2.** Results of regression analysis regarding prediction of critical thinking.

Variable	B	Std error <sub>b</sub>	$\beta$	T	p	Zero-order r	Partial R
Constant	2.856	0.155	-	18.446	0.000	-	-
Natural prize strategies	-0.030	0.036	-0.058	-0.837	0.403	0.265	-0.043
Behavior-oriented strategies	-0.337	0.121	-0.489	-2.775	0.006	0.316	-0.141
Constructive thinking model strategies	-0.231	0.122	-0.302	-1.888	0.060	.360	-0.096
Self leadership (General)	0.957	0.259	1.138	3.691	0.000	0.405	0.186

$R = 0.426$ ;  $R^2 = 0.181$ ;  $F_{(4,381)} = 21.101$ ;  $p = 0.000$ .

strategies, constructive thinking strategies and general self leadership and students' critical thinking score ( $R = 0.426$ ,  $R^2 = 0.181$ ,  $p < 0.01$ ). The four variables mentioned above all together explain around 18% of the total variance in critical thinking. According to the standardized regression coefficients ( $\beta$ ), the relative order of importance of interpreting variables on critical thinking is as follows: general self leadership, behavior-oriented strategies, constructive thinking model strategies and natural prize strategies. T- test results regarding significance of the regression coefficients t reveal that general self leadership and behavior-oriented strategies are meaningful instruments of prediction on critical thinking. The other two variables do not have a significant effect. According to the results of multiple regression analysis held between sub dimensions of self leadership and critical thinking, regression equality regarding prediction of critical thinking (mathematical model) is as follows:

Critical thinking = 2.856 - 0.030 natural prize strategies - 0.337 behavior-oriented strategies - 0.231 constructive thinking model strategies + 0.957 general self leadership.

## Conclusion

This study mainly addresses the relationships between self leadership and critical thinking. 386 students participated in the study. Self leadership has eight sub dimensions while critical thinking as six sub dimensions. Majority of the correlations between sub dimensions of self leadership and critical thinking skills was found positive. Two of them are as follows: (1) there is a correlation of 0.39 between setting goals for her/him and dreaming successful performance. (2) There is a correlation of 0.38 between evaluating thoughts/assumptions and open-mindedness.

There is a correlation of 0.41 between critical thinking and self leadership. This indicates that there is a positive correlation at intermediate level between critical thinking and self leadership. Results of the multiple regression analysis regarding prediction of critical thinking demonstrate that self leadership is a significant instrument of prediction on critical thinking. Those with a high level of self leadership are able to realize critical thinking at a higher level than those with lower self leadership.

There is not a significant relationship between either self leadership or critical thinking and gender and discipline. Still, there is correlation, though low, between gender and analytical ( $r = 0.11$ ), gender and self awarding ( $r = 0.16$ ), gender and clues ( $r = .16$ ) and discipline and clues ( $r = -0.12$ ) among sub dimensions.

As a result of this study, we note the following suggestions:

- 1) While teaching students how to think critically, firstly importance should be attached to developing their self leadership.
- 2) Parallel studies should be carried out on elementary school students and teachers concerning the relationships between critical thinking and self leadership.

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