CITY UNIVERSITY OF HONG KONG

Expectation Matters: The Effect of Cognitive Dissonance on Self-Esteem, Academic Disengagement, Achievement and Associated Emotions

A Report Submitted to

Department of Applied Social Studies

in Partial Fulfillment of the Requirements for

the Bachelor of Social Sciences in Psychology

by

LIU Yi Rui

May, 2008

Abstract

Objective: This study examined the effect of achievement dissonance on academic disengagement, academic achievement, self-esteem and associated emotions. The main objective of this study was to investigate if a discrepancy between desired achievement and actual achievement would affect the motivation to study.

Methods: Participants were 124 undergraduate students. They were categorized into three groups, the neutral, negative and positive dissonance group. Students who got a lower mark than expected were classified into the negative group and those who got a higher mark than expected were labeled the positive group. Neutral group indicated that there was no difference between the actual and expected marks. They had to fill in 3 sets of questionnaire in 3 intervals.

Results: Results showed that the negative dissonance group had significant differences in academic disengagement, associated emotions and self-esteem as compared with the other two groups. Both positive and negative groups disengaged significantly than the neutral group.

Conclusion: Academic dissonance did have effects on the motivation of studying. The role of self-esteem had important influences on the dissonance process.

Acknowledgements

I would like to take this opportunity to express my sincere gratitude to my supervisor, Dr. Vincent Tse, for his emotional support and encouragement throughout the two semesters. His passion in teaching and academic research inspires me a lot. I really feel honoured to learn from Vincent in my 3 years' university life. Finally, I would like to wish him every success in his future endeavours.

Table of Contents

List of Tables

Chapter 1 - Literature Review

1.1 The Theory of Cognitive Dissonance

The theory of cognitive dissonance, originally founded by Leon Festinger (1957), held that human beings always try their best to maintain a consistent state. He proposed that if inconsistency occurs, people will try to rationalize the inconsistency. If one cannot successfully resolve it by rationalization, psychological discomfort will result. One of the fundamental building blocks of this theory lies on the innate motivation to reduce the dissonance which causes psychological discomfort. Another important assumption is that people tend to avoid contextual information that may increase the dissonance (Festinger, 1964; Frey, 1986).

Festinger (1957) further argued that there are elements that exist in our cognition. These elements can be knowledge, feeling, desire or anything. He identified three kinds of relationships among these elements. To begin with, elements that are irrelevant to one another are said to have an irrelevant relation that is not the primary focus of his theory. The second relationship concerns two non-fitting elements, forming a dissonant relation. By non-fitting, it means that the occurrence of a given element would not follow the other. This relationship is a function of motivation and desired consequences. Accordingly, even if a particular behaviour or belief is dissonant with another, the desired consequences may alter the dissonance by changing one of the elements. The last relation is the presence of two consonant

elements. When dissonance emerges, one can either try to alter one of the contradicting elements or taking a third relevant element into account (Fraser, 2001).

1.2 The Role of Self-Esteem in Dissonance Process

The self-affirmation (Steele, 1988) and self-consistency (Aronson, 1968) theories are dominant in explaining the role of self-esteem in the dissonance process. The self-affirmation theory held that people with higher self-esteem generally have more accessible positive self-attributes. As a result, when dissonance occurs, they will experience less dissonance as they can re-direct their attention to other positive self-attributes. The self-consistency theory proposed that people with higher self-esteem will have greater dissonant feeling as they have higher standards for their behaviours.

1.3 Cognitive Dissonance and Associated Emotions

The role of emotion in dissonance process has also been examined. Stone and Cooper (2001) suggested that anxiety and guilt might be correlated with dissonance resulted from deviation from self normative standards. On the other hand, dissonance emerged from discrepancy from ideal self standards might be associated with shame or embarrassment.

1.4 The Relationship between Self-Esteem and Academic Success

As early as the time of William James (1890/1950), the concept of self-esteem emerged. Rosenberg (1965) conceptualized self-esteem in term of a stable global feeling of self-worth which has become the most widely adopted definition in this

domain. Other investigators also provided a number of different definitions, most of which centred on the importance of the senses of competence and positive emotions (e.g. Branden, 1969). Self-esteem can also be specific to a particular area of concern, ranging from appearance to athletics (Rosenberg, Schooler, Schoenbach, & Rosenberg, 1995).

Research found that there were positive but modest correlation and effect size between self-esteem and academic success (Cohen, 1988; Hattie, 1992). Wylie (1979) made a striking comment that the correlation is sufficiently replicated that it could be regarded as a fact, however, the relationship is not a casual one (Valentine, DuBois, & Cooper, 2004).

1.5 Self-Esteem as a Stable Construct and the Contingency of Self-Worth

Throughout years of research endeavour, the academia has reached the consensus that self-esteem is a stable trait (Savin-Williams & Demo, 1983; Wells, 1988). Studies indicated that people tended to seek information that was consistent with their self-concept while rejected those that contradicted with their self perception (Wylie, 1979). Nonetheless, there were certain lines of evidence suggesting that self-esteem might change temporarily subject to contextual influences. A self comparison with another person who is more successful best exemplifies a temporarily change in self-esteem (Tesser, 1988).

Accordingly, following the notion that self-esteem is a relatively stable and persistent trait with situational variations, it is reasonable to formulate that people's self-esteem may go through up and down periods. However, there are individual differences in the kinds of events that are central to our contingencies of self-worth (James, 1890/1950). An individual may regard academic success and failure as a dependent of his or her self-concept whereas another may highly values the importance of career prospect. In other words, whether a given event lowers or rises up people's self-esteem is highly idiomorphic. Crocker, Sommers and Luhtanen (2002) provided an interesting picture on the effect of academic success on students who based their self-esteem on academic achievement. They examined the effect of rejection and acceptance to graduate programme on students' self-esteem. Results showed that for students who based their self-concept on academic matters, their levels of self-esteem fluctuated significantly in accordance with the acceptance or rejection of their graduate study admission. On the contrary, students who did not entitle too much value on educational attainments remained relatively stable in their self-esteem, regardless of the rejection or acceptance.

1.6 Academic Engagement and Psychological Disengagement

Academic engagement is defined as actively committed, attended to and involved in academically related issues (Newmann, Wehlage, & Lamborn, 1982). This concept is closely tied with motivation (Singh, Granville, & Dika, 2002).

Motivation can mediate the level of engagement in academic matters on one hand while engagement can enact a stimulating effect on motivation on the other. This correlation can be further extended and linked with psychological disengagement. Harter (1993) formulated that students who find low academic achievement poses a threat to their ego may engage in a re-direction process. This process enables them to commit less in area that symbolizes a threatening signal to their self-concept and invest more on other areas of interest. By doing so, the role of academic achievement in the contingency of self-worth is diminished. Accordingly, it is not surprising that these students will no longer be motivated in academic issues. They will instead evaluate themselves in a more positive light in domains that are irrelevant to academic achievement such as social competence and physical appearance (Alves-Martins, Peixoto, Gouveia-Pereira, Amaral, & Pedro, 2002).

Psychological disengagement is a common phenomenon in school (Steele, 1997), especially for students who encounter learning failures. If an individual is psychologically disengaged from a given area, it implies that his or her self-esteem will no longer be contingent on the outcome of this specific domain (Major & Schmader, 1998). It is a defensive tool in protecting self-worth by two processes, namely devaluing and discounting (Schmader, Major, & Gramzow, 2001). Devaluing is the demeaning of the importance of academic attainment such that academic matters are no longer regarded as relevant to the individual's self-concept. On the

other hand, students may also discount their achievement which in turn concludes that their grade does not objectively indicate their ability.

1.7 Present Study

The present study aims to test the theory of cognitive dissonance. The theory predicts that when dissonance occurs, people will try to reduce it by altering either one of the contradicting cognitions. Past research focused on the role of self-esteem in dissonance experience. In this study, the effect of the negative dissonance experience on temporary self-esteem is examined. Also, this study investigates the emotions associated with the dissonance and the ways students deal with the dissonance.

Hypothesis 1

When students experience discrepancy between what they expect and achieve actually, their academic self-esteem will change temporarily as self-esteem is correlated with academic achievement. Therefore, the first hypothesis is that there is a significant difference in the academic self-esteem between students who experience a feeling of dissonance and those who do not.

Hypotheses 2 and 3

According to the theory of cognitive dissonance, when people experience dissonance, they will try to reduce it. In this case, there are two ways that one can adopt to reduce the dissonance. Students may study more in an attempt to improve their academic achievement or they may engage less in their study. The second hypothesis is that

students who get a mark lower than they expect will spend significantly more time in studying than the other two groups. The third hypothesis examines if students who get a mark lower than they expect will disengage significantly than other students.

Hypothesis 4

The fourth hypothesis is that people who get lower marks than they expect will experience negative emotions such as feeling ashamed and nervous as the standard for acceptable academic achievement is a personal judgment.

Chapter 2 - Methodology

2.1Participants

Participants were 124 undergraduate students who studied an introductory psychology course (53 males, 71 females). They gained credits in exchange for participation in this study.

2.2 Measures

The dissonance experienced was determined by the difference between the actual marks participants got in quiz 1 and the marks they desired in week 5. There were 3 types of dissonance feelings. If there was no discrepancy, it was classified as the ‘no dissonance’ group. If they got a mark higher than they desired, they were in the ‘positive dissonance’ group. Students who got a mark lower than they desired were in the ‘negative dissonance’ group.

The temporary change in self-esteem was measured using the State Self-esteem Scale (Heatherton & Polivy, 1991). It has 20 items and is a 5-point scale (1 = not at all, 5 = extremely). The scale was developed to measure short-term change in self-esteem.

Academic success was measured using participants’ marks in the first quiz. The academic psychological disengagement scale was adopted from Re´gner and Loose (2006). It consists 6 items and is a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

The emotion associated with dissonance was measured by the Positive and Negative Affect Schedule (PANAS, Watson, Clark, & Tellegen, 1988). The scale has two parts, each of which contains 10 items. The positive affect part measures 10 positive affects and the negative affect part measures 10 negative affects. It is a 5-point scale.

2.3 Procedures

Participants were asked to fill in several sets of questionnaires in weeks 5, 8 and 14 respectively. In week 5, they filled in a questionnaire measuring their state self-esteem, academic disengagement, their emotions, number of hours studying, and their expectation of the first psychology quiz. In week 8, they filled in another questionnaire about their self-esteem, academic disengagement, their emotions, number of hours studying and their dissonance between the marks they got in the quiz and their desired marks. In week 14, they filled in the last questionnaire about their self-esteem, academic disengagement, number of hours studying and their expectation of the second quiz. They were debriefed after the session about the nature and aim of this study.

2.4 Statistical Analysis

For the first hypothesis, an Analysis of Variance (ANOVA) test will be conducted to examine the baseline difference of self-esteem among the three groups in week 5 and the subsequent change in self-esteem in week 14. Another ANOVA test

will be conducted to examine if there is any significant difference in state self-esteem at the day participants received their quiz results (week 8) among the three dissonance groups.

The second hypothesis will also be tested using an ANOVA test to examine if students experiencing a 'negative dissonance' will study significantly more hours than the other two groups by the end of the semester. An ANOVA test will be conducted to examine if there is any significant difference in hours of revision among the three dissonance groups in week 8 to serve as a baseline. For the fourth hypothesis, an ANOVA test will be used to investigate if there is any significant difference in the degree of academic disengagement at the end of the semester among the three dissonance groups. An ANOVA test will be used to examine if there is any significant difference in the degree of academic disengagement in week 5 and 8 for baseline control. For the last hypothesis, an ANOVA test will be used to determine if there is any significant difference in the experience of negative emotions among the three dissonance groups in week 8. An ANOVA test will be used to test the difference among the three groups on the experience of negative emotions in week 14.

Chapter 3 - Results

Overall Descriptive Statistics

The descriptive statistics are shown in Tables 1 and 2. Table 1 shows the sample sizes, means and standard deviations of major variables. Table 2 shows the internal consistency of the scales. Table 3 is a correlation matrix.

Table 1
Summary of Descriptive Statistics of Major Variables

	n	M	SD
Males	53	--	--
Females	71	--	--
Age	--	19.63	1.12
Academic Self-esteem (Week 5)	--	23.4	4.64
Academic Self-esteem (Week 8)	--	23.02	4.68
Academic Self-esteem (Week 14)	--	22.6	4.68
Academic Disengagement (Week 5)	--	13.23	3.65
Academic Disengagement (Week 8)	--	14.36	3.80
Academic Disengagement (Week 14)	--	14.90	3.83

Table 2
Internal Reliability of the Scales Used in This Study

	Cronbach's Alpha
Academic Self-esteem (Week 5)[a]	.802
Academic Self-esteem (Week 8)[a]	.818
Academic Self-esteem (Week 14)[a]	.820
Academic Disengagement (Week 5)[b]	.786
Academic Disengagement (Week 8)[b]	.795
Academic Disengagement (Week 14)[b]	.822
PANAS (Week 5)	
Positive Emotions[c]	.866
Negative Emotions[c]	.891
PANAS (Week 8)	
Positive Emotions[c]	.781
Negative Emotions[c]	.907
PANAS (Week 14)	
Positive Emotions[c]	.833
Negative Emotions[c]	.912

Note: [a] item no = 7
[b] item no = 6
[c] item no = 10

Table 3
Intercorrelations among the Major Variables

Variables	M	SD	1.	2.	3.	4.	5.	6.	7.	8.
1. Academic self-esteem day 1	23.4	4.64	--							
2. Academic self-esteem day 2	23.02	4.68	.746**	--						
3. Academic self-esteem day 3	22.6	4.68	.71**	.721**	--					
4. Academic disengagement day 1	22.77	3.65	.066	.054	.197*	--				
5. Academic disengagement day 2	21.7	3.83	.111	.124	.159	.677**	--			
6. Academic disengagement day 3	21.1	3.83	.074	.017	.129	.629**	.613**	--		
7. Quiz 1 result	70.16	13.19	.207*	.338**	.179*	.025	.051	-.083	--	
8. Quiz 2 result	73.4	14.73	.062	.190*	.213*	.023	.079	.003	.543**	--

Note: *p<.05. **p<.01.

Hypothesis 1

The result of ANOVA showed that there was no significant difference in state self-esteem in week 8 among the three dissonance groups, F (2, 121) = .95, p = .39. Another sets of ANOVA test found that there were significant differences in state self-esteem in week 5, F (2, 121) = 4.32, p = .02 and week 14, F (2, 121) = 3.80, p = .03, among the three dissonance groups.

Table 4
ANOVA Results for Academic Self-Esteem in the Three Weeks

	Dissonance						Dissonance					
	P		N		Nil		P x N		P x Nil		Nil x N	
AcSE	M	SD	M	SD	M	SD	MD	*p*	MD	*p*	MD	*p*
Wk 5	21.98	4.3	24.65	5.15	24.03	4.02	-2.67	.006*	-2.05	.044*	-.621	.557
Wk 8	22.38	4.3	23.15	5.21	23.79	4.55	-.77	.439	-1.41	.176	.644	.556
Wk14	21.32	4.81	22.95	4.55	24.06	4.25	-1.63	.096	-2.74	.008*	1.11	.301

Note: *p<.05. P = Positive, n = 50; N = Negative, n = 40; Nil = No dissonance, n = 34; AcSE = Academic Self-esteem

Hypothesis 2

The result of ANOVA revealed that there was a significant difference in the hours of studying psychology in week 14 among the three dissonance group, F (2, 121) = 3.84, p = .02. Post-hoc Least Significant Difference Tests found that students who experienced a 'negative dissonance' state (M = 1.18, SD = .98) studied significantly more hours than the group that did not experience any dissonance (M = .59, SD = .70). There was no significant difference in the hours of study in week 5 among the three groups, F (2,121) = 1.41, p = .25. In week 8, there was significant difference in the hours of study among the three groups, F (2, 121) = 3.27, p = .04.

Table 5
ANOVA Results for Hours Spending on Studying in the Three Weeks

	Dissonance						Dissonance					
	P		N		Nil		P x N		P x Nil		Nil x N	
Hours	M	SD	M	SD	M	SD	MD	*p*	MD	*p*	MD	*p*
Wk 5	.92	.70	.93	.86	.68	.59	-.01	.97	.24	.13	-.25	.15
Wk 8	1.08	.78	1.18	.81	.74	.71	-1.0	.56	.35	.05*	-.44	.02*
Wk14	1.00	1.01	1.18	.98	.59	.70	-.18	.38	.41	.05*	-.59	.01*

Note: *p<.05. P = Positive, n = 50; N = Negative, n = 40; Nil = No dissonance, n = 34; Hours = Hours spending on studying

Hypothesis 3

The effect of cognitive dissonance on academic disengagement was observed in week 14 only. For the baseline examination, ANOVA revealed no significant difference in academic disengagement in week 5, F (2, 121) = 2.09, p = .13, and week 8, F (2, 121) = 2.06, p = .13. A third ANOVA test found that there was a significant difference in the degree of academic disengagement in week 14 among the three dissonance groups, F (2,121) = 3.39, p = .04. Post-hoc LSD tests found that both the positive (M = 21.54, SD = 3.30) and negative dissonance groups (M = 21.75, SD = 3.66) disengaged significantly more than the neutral group (M = 19.68, SD = 4.43). There was no significant difference between the positive and negative groups.

Table 6
ANOVA Results for Academic Psychological Disengagement in the Three Weeks

	Dissonance						Dissonance					
	P		N		Nil		P x N		P x Nil		Nil x N	
AcdPsyDis	M	SD	M	SD	M	SD	MD	*p*	MD	*p*	MD	*p*
Wk 5	22.66	3.12	23.63	3.76	21.91	4.04	-.97	.21	-75	.36	-1.71	.05*
Wk 8	21.74	3.21	22.50	3.95	20.71	4.37	-.76	.35	1.03	.22	-1.79	.05*
Wk14	21.54	3.30	21.75	3.66	19.68	4.43	-.21	.79	1.86	.03*	-2.07	.02*

Note: *p<.05; P = Positive, n = 50; N = Negative, n= 40; Nil = No dissonance, n = 34; AcadPsyDis = Academic Psychological Disengagement

Hypothesis 4

ANVOA test indicated that there was no significant difference in the experience of negative emotions in week 14 among the three dissonance groups, F (2, 121) = 1.78, p = .17. However, there was a significant difference in the experience of negative emotions among the three groups in week 8, F (2, 121) = 3.75, p = .03. Post-hoc LSD tests found that the negative dissonance group (M = 25.98, SD = 8.59) experienced significant more negative emotions than the positive (M= 21.76, SD = 8.67) and neutral group (M = 21.09, SD = 8.49). In week 8, the negative group (M = 3.03, SD = 1.17) was significantly more nervous than the positive (M = 2.5, SD = 1.3) and neutral group (M = 2.26, SD = 1.02).

Table 7
ANOVA Results for Negative Emotions in the Three Weeks

	Dissonance						Dissonance					
	P		N		Nil		P x N		P x Nil		Nil x N	
NegEm	M	SD	M	SD	M	SD	MD	*p*	MD	*p*	MD	*p*
Wk 5	21.82	7.98	18.98	8.21	17.56	6.75	2.84	.09	4.26	.02*	-1.42	.43
Wk 8	21.77	8.67	25.98	8.59	21.09	8.49	-4.22	.02*	6.72	.73	-4.89	.02*
Wk14	21.96	7.70	22.18	9.27	19.00	7.03	-.22	.90	2.96	.10	-3.18	.09

Note: *p<.05. P = Positive, n = 50; N = Negative, n = 40; Nil = No dissonance, n = 34; NegEm = Negative emotions

Table 8
ANOVA Results for Ashamed and Nervous Feelings in Week 8

	Dissonance						Dissonance					
	P		N		Nil		P x N		P x Nil		Nil x N	
	M	SD	M	SD	M	SD	MD	*p*	MD	*p*	MD	*p*
Nervous	2.50	1.30	3.03	1.17	2.26	1.02	-.53	.04*	.24	.37	-.76	.01*
Ashamed	2.40	1.25	2.80	1.24	2.44	1.31	-.40	.14	-.04	.88	.04	.88

Note: *p<.05. P = Positive, n = 50; N = Negative, n = 40; Nil = No dissonance, n = 34.

Chapter 4 - Discussion

In general, the results showed that the negative dissonance group had more negative emotions, studied more and disengaged more than the other two groups. The non-significant difference in the state self-esteem at week 8 among the three dissonance groups could be explained by their initial differences in week 5. From Table 4, the negative dissonance group had the highest self-esteem in week 5 and the positive dissonance group was the lowest in self-esteem. It might be that when the two groups were asked about their expectation of the first quiz in week 8, their state self-esteem changed accordingly. Specifically, the self-esteem of the negative and positive dissonance groups decreased and increased in week 8 as compared to week 5 respectively. It was possible that the self-esteem of the negative dissonance group dropped in week 8 after they realized that they had an over-expectation on their marks. The self-esteem of the positive dissonance group might be boosted up in week 8 as their marks were higher than their expectation. The effect of the discrepancy between the desired and actual marks might cause dissonance to the participants. The negative dissonance group was found to spend more hours studying in week 14 which was consistent with the dissonance theory (Festinger, 1957). By spending more hours in studying, they might be able to achieve more in the second quiz, which might reduce their dissonance.

Consistent with previous findings, both positive and negative dissonance groups disengaged significantly than the neutral group in week 14. From Table 3, the correlations among the level of academic disengagement in the three weeks and quiz results were not significant but the neutral group had significantly higher self-esteem than the positive group (Table 4). The self-esteem of the neutral group was also higher than that of the negative group, though the difference was not significant. Re´gner and Loose (2006) argued that disengagement did not result from poor grades but from poor self-esteem. Accordingly, as the levels of self-esteem of the two dissonance groups were lower than the neutral group, they might disengage more by the end of the semester. Another important point was that the disengagement level was highly dependent on their contingency of self-worth on academic matters. Given the mediating effect of self-esteem in academic disengagement and the importance of contingency of self-worth in self-esteem fluctuation (Crocker et al, 2002), it is important to address the interrelationships among the above three factors.

The effect of dissonance feeling on academic disengagement could be better understood if the role of self-esteem was known. Stone and Cooper (2001) proposed the Self-standards Model of cognitive dissonance (SSM) in an attempt to specify the effect of self-esteem in dissonance process. They proposed that if the context under which a given behaviour assessed is available for accessing personal standards, people who have higher self-esteem will experience more dissonance arousal they have a

higher standard for their behaviour. On the other hand, if a given behaviour is subject to normative standards, people will inevitably experience dissonant feeling, independent of the self-esteem level. The SSM further argued that the accessibility of positive self-attributes was a critical determinant. Regardless of the nature of the dissonance arousal, when positive and relevant self-attribute is accessible in the context, high self-esteem individuals will feel more dissonant than low self-esteem people if the attribute concerns personal standards. It is because high self-esteem people generally hold higher expectations for competent behaviours. The presence of personal, positive and relevant self-attributes will provoke a stronger dissonant feelings in high self-esteem people. On the contrary, if the self-attribute accessible concerns normative standards, people with different self-esteem levels will feel uncomfortable to the same magnitude. Lastly, if the self-attribute is positive but irrelevant with the current context, the dissonance will decrease in general. The reason is that people can avoid the psychological discomfort by altering their attention to other irrelevant positive self-domain.

As this study did not control the accessibility of self-relevant attributes, the initial effect of self-esteem remained unknown. It was possible that the three groups all experienced dissonance initially but students with higher self-esteem were somehow more able to reduce their dissonance feeling with accessible irrelevant self-attributes. In the same vein, it was also possible that some participants with higher

self-esteem experienced more dissonance as some relevant self-attributes were accessed at that moment. In other words, this study had not examined the provoking mechanism of self-esteem during the process of experiencing dissonance.

Finally, the negative dissonance group felt significantly more nervous than the positive and neutral groups in week 8. As the standard of academic achievement differs among individuals, it is logical that the negative group would feel more nervous as they got a lower mark in the quiz than they expected. Past research also found an inverse association between test anxiety and academic achievement (Newbegin & Owens, 1996).

Overall, this study showed that the self-esteem of students whose achievement was lower than their expectation did not change significantly than other students when they were asked to evaluate the magnitude of dissonance shortly after they received their results. However, their initial self-esteem was the highest among the three groups. A lot of research has been focusing on the reciprocal relation between academic success and self-esteem (see Baumeister, Campbell, Krueger, & Vobs, 2003; Valentine et al, 2004 for a review) and many programmes have been implemented in an effort to improve students' academic achievement by boosting their self-esteem (Forsyth, Lawrence, Burnette & Baumeister, 2007). However, Marsh and O' Mara (2008) argued that it is important to improve people's performance as well as boosting up their self-esteem for the effect to maintain in the long-term. This study

showed that the performance of students is important in determining their subsequent academic outcome.

Limitations

There were several limitations. Firstly, the relationship between academic success and self-esteem was mainly analyzed using participants' first and second quizzes' results. However, longitudinal designs with multiple data collections were needed in order to establish a more valid relationship (Marsh & Craven, 2006). The simple research design in this study might affect the validity of the results. Secondly, the role of self-esteem could not be addressed in this study as the State Self-esteem scale used in this study was sensitive to temporarily change in self-esteem instead of measuring the construct in a global sense. As mentioned above, self-esteem has an indispensable role in dissonance process, academic disengagement and academic achievement. The research could therefore be improved with global measurement of self-esteem and manipulation of the attributes assessed.

Summary

In general, the current study confirmed the influence of dissonance feeling on academic disengagement and negative emotions. Also, the effect of dissonance on temporarily change of self-esteem had been depicted, although the whole picture was still incomplete.

References

Alves-Martins, M., Peixoto, F., Gouveia-Pereira, M., Amaral, V., & Pedro, I. (2002). Self-esteem and academic achievement among adolescents. *Educational Psychology,* 22, 51-62.

Aronson, E. (1968). Dissonance theory: progress and problems. In R. P. Abelson, E. Aronson, W. J. McGuire, T. M. Newcomb, M. J. Rosenberg, & P. H. Tannenbaum (Eds.), *Cognitive consistency theories: A source book* (pp. 5–27). Skokie, IL: Rand McNally.

Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest, 4*, 1-44.

Branden, N. (1969). *The psychology of self-esteem.* New York: Bantam.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.

Crocker, J., Sommers, S. R., & Luhtanen, R. K., (2002). Hopes dashed and dreams fulfilled: Contingencies of self-worth and graduate school admissions. *Personality and Social Psychology Bulletin, 28,* 1275-1286.

Festinger, L. (1957). *A theory of cognitive dissonance.* Stanford, CA: Stanford University Press.

Festinger, L. (1964). *Conflict, decision and dissonance.* Stanford, CA: Stanford

University Press.

Forsyth, D. R., Lawrence, N. K., Burnette, J. L., & Baumeister, R. F. (2007). Attempting to improve the academic performance of struggling college students by bolstering their self-esteem: An intervention that backfired. *Journal of Social and Clinical Psychology, 26,* 447-459.

Fraser, C. (2001). Attitude organization and change. In C. Fraser & B. Burchell (Eds.), *Introducing social psychology* (pp. 250-267). Cambridge: Polity.

Frey, D. (1986). Recent research on selective exposure to information. In L. Berkowitz (Ed.), *Advances in experimental social psychology, Vol, 19.* New York: Academic Press.

Hattie, J. (1992). *Self-concept.* Hillsdale, NJ: Erlbaum.

Heatherton, T. F. & Polivy, J. (1991). Development and validity of a scale for measuring state self-esteem. *Journal of Personality and Social Psychology, 60,* 895-910.

James,W. (1950). *The principles of psychology.* New York: Holt. (Original work published 1890).

Major, B., & Schmader, T. (1998). Coping with stigma through psychological disengagement. In J. Swim & C. Stangor (Eds.), *Prejudice: The target's perspective* (pp. 219-241). New York: Academic.

Marsh, H. W., & Craven, R. G. (2006). Reciprocal effects of self-concept and

performance from a multidimensional perspective: Beyond seductive pleasure and unidimensional perspectives. *Perspectives on Psychological Science, 1*, 133-163.

Marsh, H. W., & O' Mara, A. (2008). Reciprocal effects between academic self-concept, self-esteem, achievement, and attainment over seven adolescent years: Unidimensional and multidimensional perspectives of self-concept. *Personality and Social Psychology Bulletin, 34*, 542-552.

Newmann, F. M., Wehlage, G. G., & Lamborn, S. D. (1992). The significance and sources of student engagement. In F. M. Newmann (Ed.), *Student engagement and achievement in American secondary schools.* New York: Teachers' College Press.

Re´gner, I., & Loose, F. (2006). Relationship of sociocultural factors and academic self-esteem to school grades and school disengagement in North African French adolescents. *British Journal of Social Psychology, 45*, 777-797.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Rosenberg, M., Schooler, C., Schoenbach, C., & Rosenberg, F. (1995). Global self esteem and specific self-esteem: Different concepts, different outcomes. *American Sociological Review, 60,* 141-156.

Savin-Williams, R. C., & Demo, D. H. (1983). Situational and transituational determinants of adolescent self-feelings. *Journal of Personality and Social Psychology, 44*, 824-833.

Schmader, T., Major, B., & Gramzow, R. H. (2001). Coping with ethnic stereotypes in the academic domain: Perceived injustice and psychological disengagement. *Journal of Social Issues, 57,* 93-111.

Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 261-302). San Diego, CA: Academic Press.

Steele, C. M. (1997). A threat in the air: How stereotypes shape the intellectual identities and performance. *American Psychologists, 52,* 613-629.

Stone, J., & Cooper, J. (2001). A self-standards model of cognitive dissonance. *Journal of Experimental Social Psychology, 37,* 228-243.

Singh, K., Granville, M., & Dika, S. (2002). Mathematics and science achievement: Effects of motivation, interest and academic engagement. *The Journal of Educational Research, 95,* 323-332.

Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. *Advances in Experimental Social Psychology, 21*,181-227.

Valentine, J. C., DcBois, D. L., & Cooper, H. (2004). The relation between self-beliefs and academic achievement: A meta–analytic review. *Educational Psychologist, 39,* 111-133.

Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief

measures of positive and negative affect: The PANAS scales." *Journal of Personality and Social Psychology, 54*, 1063-1070.

Wells, A. J. (1988). Variations in mothers' self-esteem in daily life. *Journal of Personality and Social Psychology, 55*, 661-668.

Wylie, R. C. (1979). *The self-concept: Theory and research on selected topics* (Vol. 2, 2nd ed.). Lincoln: University of Nebraska Press.