Relationship between five-factor model of personality and social self-efficacy in adolescents with academic motivation

Seyyed Jalal al-Din Hosseini Iraj *

M.A of educational management Azad university of Mashhad, Mashhad, Iran

Abstract

The purpose of this study was to investigate the relationship between personality characteristics and social self-efficacy with academic motivation in male high school students. The research method was descriptive. 300 students were selected by multistage cluster sampling and responded to the questionnaires of personality characteristic, academic motivation and social self-efficacy. Finding: The results of Pearson correlation coefficient showed that there is significant correlation between students' academic motivation and five personality characteristics, including neuroticism, openness, agreeableness, extraversion, and conscientiousness. Also, there was a significant positive correlation between social self-efficacy and academic motivation. Results of regression analysis showed that the personality characteristics of social self-efficacy and conscientious was able to predict and explain the positively and significantly the academic motivation of boy students. Attitudes and abilities in adapt to circumstances causes reduced stresses including academic, emotional and social stress. On the other hand, weak self-efficacy results in negative evaluation, unfavorable and the sense of disability and helpless.

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* Corresponding author: hosini_jalal@yahoo.com

1. Introduction

High attention to education is the most important factor in the cultural, social and economic development. Education is responsible for creating and facilitating the ground for development of talents and abilities of individuals. This is why many communities in defining goals and adopting teaching methods do their best efforts. One of the major pests of each education system that every year causes great losses in facilities, resources and human and economic potentials with irreversible effects on the individual and social dimensions is the phenomenon of educational failure. UNESCO attributed the concept of education failure to repeating the educational grade, dropout and decreased quality of training and education. Education failure is one of the problems of the educational systems, including The Education Organization. In other words, educational failure means the failure in education, which can assessed by measures such as low average, repeating the lesson, prolongation of education period, dismissing, withdrawal and dropout can be considered (Fata, Azari, Baradaran, & Atlasi, 2013).

It seems that one of the concepts related to educational failure is academic motivation. The term motivation is derived from the Latin verb of "movere" with the meaning of to move. Motivation is conceptualized in terms of internal forces, stable characteristics, behavioral responses to stimuli and a set of beliefs and emotions. Most of the early ideas about motivation have attributed it to the internal forces such as instincts, willingness, characteristics and wanting. Contemporary cognitive approaches believe that thoughts, beliefs and personal emotions affect the motivation. The main elements intended by scientists and specialists about motivation are covered with this definition: "Motivation is a process during which the goal oriented activity raises and retains". Motivation requires physical or mental activity. Physical activity includes effort, perseverance and other apparent actions. It includes subjective activities of cognitive actions such as planning, rehearsing, organization, supervision, decision making, problem-solving and progress measurement as a

process. Most of what we know about motivation is obtained from survey of the way people respond to difficulties, problems, failures and obstacles which in the way of achieving long-term goals may face. Motivational processes such as expectations, documents and affection help people to overcome difficulties and make continued their motivation (Pintrich & Schunk, 1996).

Motivation has mutual relationship with learning and performance. That is motivation affect learning and performance and what the students do and learn influences on their motivation (Schunk, 1995).

One of the factors influencing on human behavior is their personality. Type of human characteristic characteristics influences on his behavior. Thus, characteristic characteristics of people affect their motivation to perform behavior. Methods of human motivation are affected by their conditions in the past and present. The intensity and amount of people's motivation affect also by self-esteem and type of their work.

Eysenck (1997) proposed three factors of personality dimensions: extraversion, neuroticism and psychoticism. Eysenck considered all three factors as part of normal personality structure. All three factors are bipolar so that extraversion is placed at one end of factor and introversion occupies the opposite polar. Similarly, it includes neuroticism factor in one polar and firmness in the other pole. As well as it includes psychoticism and in a pole and ethical function in other pole. Given the importance of personality indexes, especially introversion and extraversion, Eysenck (1997) believed that many psychology studies because of ignoring the personality factors have reached to wrong results. Research that has been done in the field of education comparing effectiveness of explorative learning and traditional perceptional learning have often found contradictory results or no result. Eysenck believed that these studies have not considered that extroverted students prefer more active explorative learning and perform better in this type of learning, while introverted students prefer perceptional passive learning and perform better in this type of learning. There is an interaction between personality dimensions and

learning styles and since higher learning causes increased motivation, thus, we can predict a significant correlation between these two variables. Recognizing of personality type in people, we can consider learning appropriate to it and we can expect learning for the right people with the personality characteristics in a specific field, which can lead to increased academic motivation (Feist, 2006).

Today, motivating as driver of human movement and giving direction to his movement more and more is being considered by authorities of the community. Motivation causes increased efficiency and causes the individual employ his talent and ability at a higher level and to be more satisfied. If people are not motivated enough to work and do not have any willingness to do it, their performance will not be noticeable. Conversely, being motivated, person will have great tendency to do work and efficiency and satisfaction will result as cognitive factors.

Bandura (1997) has noted that self-efficacy has strong influence on behavior. Also, Baldwin (1992) stated about the concept that social learning theory, which proves the relationship between internal cognition and behavior emphasizes that personality factors such as self-reliance, self-control, self-efficacy and confidence are effective on all behavior.

According to Bandura's self-efficacy theory, when necessary skills and sufficient incentives there exist, normal self-efficacy can be predicted. According to Bandura, beliefs and expectations of the individual about his ability on effective conduction of his tasks, which in our research is academic motivation, is among elements of each person's self-concept.

What is certain is that students who are of high motivation are more interested to the motivation factors, including assignments selection, effort, perseverance and progress, and will do it more seriously. Researches indicate that there is mutual relationship between high motivation and educational achievement (Ashouri, 2014). This means that higher motivation leads to more learning and better progress and consequently will lead to increased motivation. Now with respect to presented points, the importance of research would appear. The aim of the author is that in addition to factors relating to academic motivation, to assess also personality and self-efficacy factors and to determine the role of these factors. According to above points we are going to examine the relationship between the five-factor personality model and self-efficacy with academic motivation in adolescents.

2. Method

The research method is descriptive. In this research, academic motivation in adolescents as the control variable and variables of Five Factor Personality Model and self-efficacy in adolescents as predictor variables are considered.

2.1. Participants

The population of the research includes boy students of Bojnourd city, which include a total of 1251 students. Multi-stage cluster sampling method was used and the sample size according to kerjeci & Morgan's Table was estimated to be 300 students.

2.2. Measurement
2.2.1. NEO Personality Inventory

McCrae and Costa (1985), for the first time developed a questionnaire named NEO with 85 items. Then, modified versions of the questionnaire including 240 and 60 items were also proposed to measure people's personality characteristics. In the present study to examine the personality characteristics of employees, the short form of Neo questionnaire with 60 questions, which for the first time translated into Persian by Kiamehr (2002), is used. The questionnaire measures Five Big personality attributes of people, including neuroticism (N), extraversion (E), Openness (O), Agreeableness (A) and conscientiousness (C).

Each of these features in the test is measured by 12 items. Scoring the questionnaire is done in a Likert-type scale with 5 points, in the range between completely disagree (1) to strongly agree (5), which some item are scored reversely. McCrae and Costa (2004) in a study conducted on 208 students, reliability coefficients of five personality characteristic of short form Neo-test, with 60 items, using Cronbach's alpha reported to be in the ranged between 0.75 to 0.83. Kiamehr (2002) determined the correlation coefficient of the test

based on long NEO test (240 items) for the five personality characteristics in the range between r = 0.71 to r = 0.91.

2.2.2. Guide on adolescent's social self-efficacy scale

Adolescent's social self-efficacy scale developed in 1989 by Kenly to assess adolescents' self-efficacy. This is a self-report instrument with 25 items, in which respondent should use a 7 point Likert scale (from impossible= 1 to over-simplified= 7) to state that each statement to what extent show his personality. Social self-efficacy scale in adolescents has 5 subscales: social assertive (5 items), functioning in social situations (5 items), participation in social groups (5 items), friendship and intimacy aspects (7 items), and receiving or giving help (3 items). The total score of the test is between 25 and 175 and higher scores indicate higher levels of social self-efficacy of respondents.

Scoring method of social self-efficacy scale options in adolescent is as follows: impossible = 1, very difficult = 2, difficult = 3, little difficult =4, simple =5, very simple = 6, too simple = 7. To obtain scores of sub-scales of adolescent's social self-efficacy scale, we should sum all the terms relating to intended subscale together. Social self-efficacy scale for adolescents was conducted on three groups of high school students. The first sample consisted of 87 adolescents aging from 14 to 19 years old sampled from a high school located in countryside. The second sample included 76 adolescents aging from 13 to 16 years old sampled from a small suburban high school. The third sample consisted of 79 adolescents aging from 12 to 18 years old, which was sampled from a center for the treatment of psychiatric disorders including externalizing syndrome, internalization or a combination of them. Cronbach's alpha coefficient of whole the test in the first, second and third groups were reported to be 0.90, 0.92 and 0.95, respectively. The resulting reliability of retest method in the first group over a two-week period was 0.94. In addition, the reliability coefficient resulting from retest for men and women was obtained 0.81 and 0.86.

Construct validity of the scale of social self-efficacy in adolescents proved according to its significant correlation with a number of self-concept and compatibility scale. A significant positive correlation was seen between self-efficacy scores of adolescents and perception's profile scale (1982) in the first and second groups. Tin addition, significant correlation was seen between scores of the scale and adaptation measures to assess grouping between high school students (Prinz, Swan, Liebert, Weintraub, & Neale, 1978).). Social self-efficacy scores of adolescents in two groups of high school adolescent with subscales of social isolation (-0.39), social competence (0.23) and scores of adolescents with trunk mental disorders with social isolation subscale score of -0.25 were correlated.

2.2.3. Directory of Academic Motivation Scale (AMS) (specific to students)

Academic Motivation Scale (Vallerand, Pelletier, Blais, Briere, Senecal & Vallieres, 1992). This scale is designed based on the theory of self-regulation and examines three main dimensions of motivation, namely amotivation and extrinsic and intrinsic motivation. The test is consisted of seven subscales, three of which are related to intrinsic motivation (i.e. knowing, moving towards progress, and driving experience), three of which are related to extrinsic motivation (i.e. homology, breaking up and extrinsic regulation) and one subscale relating to amotivation dimension. Academic motivation scale includes 28 items and 4 terms is allocated to each subscale. This test is a self-report tool and respondent should through a 7 point Likert scale (from none= 1 too fully= 7) determine that each of mentioned statements to what extent are reason for going to school or university.

To obtain subscale's score, score of all statements relating to the intended subscale sum together. Vallerand et al., (1992) reported Cronbach's alpha coefficient for academic motivation subscales between 0.83 and 0.86. Alpha coefficient only for homology of extrinsic motivation subscale was out of the range with the value of 0.62. Reliability coefficient obtained of the retest method of academic motivation subscales for one month was reported to be between 0.71 and 0.83. The results of confirmatory factor analysis proved 7-factor

structure of scale and showed good construct validity of scale of academic motivation. In Iran, Bagheri, Shahrarai and Farzad (2003) after translation of scale applied it on 838 respondents using factor analysis technique and found that five factors out of the 7-scale structure of the scale repeats and their results made the scale in accordance with the conditions and cultural differences of Iranian society. To assess reliability, they calculated scale of intrinsic correlation coefficient and retest, which each of the subscales in most of cases was higher than 0.77, which reliability of the scale (Ranjbar, 2014).

2.3. Implementation method

After selection of samples, conflict resolution and resiliency questionnaires were distributed among respondents and then completed by participants individually. In all phases of implementation, the researcher was in close interaction with the participants and gave answer to their confusion and possible questions. For ethical issues and to attract cooperation of participants, before implemention some information on the subject and the aim of the study was given to participants, to the extent not being effective on research's results. After making confidennt the participants about issues such as the lack of individual analysis of their personal information and they are free to participate in the study and to exit whenever they want, they started to fill the questionannaires. It should be noted that participants were explained that it is necessary to write their name or password, unless they want to know the results of the study, epecially in some cases bout themseleves. To analyze the data, descriptive sttistics and to evaluate hypotheses and to generalize the results obtained from the sample to whole the population, the inferential statistics were used. Using Pearson's correlation coefficient and multiple regression, research's hypotheses were tested.

3. Results

Table1. The frequency distribution and percentage of students according to their

Field of study	Frequency	Percent
General	77	25.7
Mechanics	51	17
Electronics	63	21
Computer	49	16.3
Cartography	60	20

Based on Table 1, most of students were studying in first year of high school and the lowest groups of them were studying computer sciences. In addition, the mean and deviation of participants' age is 15.88 and 0.83, respectively.

Table2. The mean and deviation of study's variables on respondents

Variable	Mean	Deviation
Neuroticism	34.70	6.47
Extraversion	38.63	5.97
Openness	37.32	20.5
Agreeableness	37.30	5.59
conscientious	39.35	5.55
Academic motivation	118.91	26.49
Social self-efficacy	106.98	22.75

Table 2 shows the mean and deviation of the study's variables as well, including five big personality factors, academic motivation and social self-efficacy. According to the table, the

lowest and highest mean are associated to personality characteristics were conscientious (M=39.35) and academic motivation (M=118.91), respectively.

Table3. Assessment of normal distribution of data on examined variables by Kolmogorov-Smirnov test.

Variables	KM	P
Neuroticism	1.12	0.16
Extraversion	1.21	0.10
Openness	1.29	0.07
Agreeableness	1.31	0.06
conscientious	0.54	0.81
El motivation	0.99	0.27
Social self-efficacy	1.01	0.25

According to Table 3and results of Kolmogorov-Smirnov test on the research's variables, personality characteristics including academic motivation, social self-efficacy and normality of scores distribution were confirmed (P > 0.05). Therefore, the use of parametric tests for personality characteristics variables such as academic motivation and social self-efficacy is permitted.

Figure 1 show the standardized regression residual based on personality characteristics and overall score of social efficiency. As can be seen regression residuals in PP diagram constitute a line with a degree of 45 degrees, thus, the assumption of normality of regression is confirmed. In addition, to use the regression model, its other pre-assumptions were also considered. For this purpose, Durbin-Watson test for checking independency of errors, collinearity test as well as tolerance and variance inflation factor tests were studied. The results showed that the Durbin-Watson statistics was equal to 1.823, which shows independency of the errors. Results indicated that tolerance and variance inflation factor indices were equal to 0.92-1 and 1-1.09, respectively. That is, the predictor variables are independent of each other and Multicollinearity is not the case. Regarding that we have observed pre-assumptions regression analysis, the use of this test is permitted.

Table4. Stepwise regression to predict academic motivation based on personal characteristics and social self-efficacy.

Model (steps)	Multiple correlation coefficient	The coefficient of determination	The adjusted coefficient of determination	Estimates standard error
1	0.374	0.140	0.137	24.61
2	0.420	0.176	0.171	24.12

First step: conscientious; Second step: social self-efficacy.

According to Table 4, the adjusted coefficient of determination for two steps is equal to 0.171, which means that personality characteristics, i.e. Social self-efficacy and conscientious in two steps together predict 17% of the variance of the variable of the main motivation.

Table5. Results of stepwise regression analysis to predict academic motivation based on personality characteristics and social self-efficiency

Steps	Model	Total squares	DF	Mean square	F	Significance level
1: conscientious	Total	29292.44	1	29292.44	48.32	0.001
	residual	180626.47	298	606.12		
	regression	209918.91	299			
2: Social self-efficiency and conscientious	Total	37035.80	2	18517.90	31.81	0.001
	residual	172883.10	297	582.09		
	regression	209918.91	299			

Table 5 is the ANOVA table, which specifies significance of whole the model. The table includes the sum of squares, degrees of freedom (df), mean squares, the F ratio and the significant level. If the significant level of F is smaller than 0.05, it shows that predictive (independent) variable well explain changes in the criterion (dependent) variable. But when the significance level of F is larger than 0.05, it shows that the predictive (independent) variable do not explain changes in the criterion (dependent) variable well. In the present study, according to Table 4-6, the significance level of F for personality characteristics including conscientious (F = 48.32, P < 0.001) and social self-efficacy (F = 31.81, P < 0.001) is smaller than 0.05 and they are capable of predicting academic motivation. According to these findings, we concluded that personality characteristics of conscientious and social self-efficacy in two steps are able to predict and explain significantly academic motivation of students, thus, part of the first hypothesis of the present study is accepted and approved.

Table6. Stepwise regression coefficients to predict academic motivation based on personality characteristics and social self-motivation

Steps	Predictors	Non–standard coefficients		Standard coefficients	t	The level of significance
		B	SE	Beta		
1	Interactions	48.79	10.18	-	4.79	0.001
	conscientious	1.78	0.25	0.37	6.95	0.001
2	Interactions	34.92	10.68	-3.	3.27	0.001
	conscientious	1.498	0.26	0.31	5.69	0.001
	Social self-efficacy	0.234	0.064	0.20	3.64	0.001

Table 6 is called the coefficients' table, in which values for Beta are reported. As can be seen the personality characteristics such as conscientious and social self-efficacy are positively able in two steps to significantly predict academic motivation of students. It should be noted that the personality characteristics such as conscientious have greater role in predicting academic motivation of students. According to this finding, part of the first hypothesis of the present study is accepted and approved. There was significant negative correlation between academic motivation and neuroticism. As well as there is significant positive correlation between academic motivation with extraversion, agreeableness, openness and conscientious (P<0.05; P<0.01). Based on these findings, the second hypothesis of the study is confirmed and accepted. Also, there was significant positive correlation between academic motivation and social self-efficacy (P<0.01). With regard to these findings, the third hypothesis of the present study is accepted and approved.

4. Conclusion

According to the results obtained in chapter 4, it was found that personality characteristics such as conscientious and social self-efficacy are able to predict and explain the academic motivation.

According to the results, part of the main hypothesis of the present study, i.e. significant relationship between personality characteristics and social self-efficiency with academic motivation, approved and accepted. However, other part of the hypothesis due to the lack of significant relationship between personality characteristics such as neuroticism, openness, extraversion and agreeableness with academic motivation, was rejected and not accepted. The results of this study are consistent with those obtained from previous researches such as Zimmerman, Bandura, and Pones (1992). They found that self-efficacy is able to predict and explain significantly the academic progress of students.

In positive explanation of the role of conscientious in the positive and significant prediction of academic motivation of students, we can refer to the following ones. Since responsible people possess qualities such as patience, tolerance, progress motivation and conscientiousness, i.e. features that are very important in education and training opportunities. Thus, it is possible that these people are more interested in teaching and studying, to attend school and class on time, to do their education and training homework seriously and avoid improper behavior toward their classmates. Therefore, people with this personality characteristic in education and training environments are of more academic motivation. In addition, since responsible people show higher levels of happiness, joy, energy, interest and inexhaustible spirit and because their courage and assertiveness benefit of social support, warm and intimate relationships with others. These factors cause that these people less appear passive and self-reproaching. Such features cause individuals' progress in various areas such as education and training and finally cause increased academic motivation and training for them.

In explaining the role of social self-efficacy in prediction of academic motivation, we can refer to the following cases. According to Bandura, social self-efficacy is a factors operating as a cognitive mediator and affect individual's recognition, thoughts and feelings. It is not unexpected to reach such a conclusion because when students are exposed to negative events, new experiences or stressful education and identity related situations, high social efficiency helps them to manage and control those events and situations and thus to protect themselves against psychological problems and this way to strengthen their interest and motivation in various fields including education, training and social.

According to the results of chapter 4, it was found that there is positive and significant correlation between personality characteristics such as openness, extroversion, agreeableness and conscientious with academic motivation of students. Also there is negative and significant correlation between neuroticism and academic motivation. According to this finding, the first sub-hypothesis of the study is confirmed. Based on the relationship between openness, extraversion, conscientious and agreeableness with academic motivation of students; it can be said that with increasing the levels and amount of personality characteristics such as openness, extroversion, agreeableness and conscientious of individuals, including students, their motivation in education and training fields also increases. On the other hand, regarding the negative and reverse correlation of personality characteristic such as neuroticism, with students' academic motivation; it can be said that with decreasing levels of personality characteristic such as neuroticism of individuals, including students, their academic and training motivation will also increase and improve. The results of this hypothesis are consistent with results of previous research such as Kaufman, Agars and Lopez-Wagner (2008) and Propat (2009). These researchers found in their research that personality characteristics such as openness, extraversion, agreeableness and conscientious have positive and significant correlation with success, progress and academic motivation. In clarifying the positive and direct relationship between personality characteristics such as openness, extroversion, agreeableness and conscientious with education and training motivation, it can be said that, those people who have these personality characteristics has an active imagination and independent judgment, are curious about the outside world, are

more interested to having social and interpersonal activities, are more consistent with others, show deeper understanding of themselves, have a positive attitude towards their friends and classmates, their confidence is high and so on. All these features cause people, including students, with these personality characteristics to have better performance in different situations and environments, including educational environment, to pay attention to their classmates and better understand them. So people in such situations have more interest and academic motivation and there is positive correlation between personality characteristics and academic motivation.

According to the results obtained in chapter 4, there is a direct and significant correlation between social self-efficacy of adolescents with academic motivation. According to these results, the second sub-hypothesis of the study is accepted and approved and it can be said that with increasing self-efficacy of adolescents and students, their levels of education and training will also increase. The findings and results are consistent with that of research such as Nielsen (2009). He carried out a study on students and reached the conclusion that there is significant correlation between academic motivation and learning with self-efficacy so that self-efficacy is able to predict and explain significance the education and learning.

In explaining the positive relationship between self-efficacy in adolescents with academic motivation in students, it can be said that attitudes and abilities in adapt to circumstances causes reduced stresses including academic, emotional and social stress. On the other hand, weak self-efficacy results in negative evaluation, unfavorable and the sense of disability and helpless. These negative cognitions cause person in dealing with stressful and threatening situations be unable to have a good performance and avoid of emotional, social and educational inconsistencies including reduced interest and academic motivation, thus, its overall compatibility with educational and training position reduces. When students see themselves unable to achieve academic expectations will become depressed and when see themselves unable in dealing with new situation and stressful stimuli will become anxious. Therefore, we can expect that in

such circumstances, students' motivation to decrease.

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