Original Article

The Relationship Among Personality Factors, Motivational Strategies and Achievement Goals Orientation in Predicting Academic Achievement of the Students with Intellectual Disability

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Objectives: Some studies have recognized factors that are effective on academic achievement. The aim of the present study was to determine the relationship among personality factors, motivational strategies and achievement goals in predicting academic achievement of 2nd grade high school intellectually disabled students in Tehran Province.

Methods and Materials: In present correlation study, 200 intellectually disabled students (126 females and 74 males) in 2nd grade high school selected randomly by stratified sampling method from Tehran Province. Subjects completed Big Five Factor Personality Inventory (NEO-FFI), Motivational Strategies for Learning Questionnaire (MSLQ) and Achievement Goals Questionnaire-Revised (AGQ-R). Data analysis was based on stepwise regression analysis method.

Results: As personality factors, openness and being conscientiousness were correlated positively. In motivational strategies, effort regulation, help seeking and self-efficacy correlated positively, also mastery-approach and performance-avoidance goals in achievement goals orientation showed positive correlation ($p<0.05$). Neuroticism, test-anxiety and academic achievement were correlated negatively ($p<0.01$). It can be explained that 44% of variations in academic achievement are due to self-efficacy, Being conscientiousness, mastery-approach goal and neuroticism ($p<0.05$). Self-efficacy had the most contribution in predicting academic achievement of students ($p<0.01$).

Conclusion: Paying attention to the variables such as: personality (being conscientiousness and neuroticism), motivational (self-efficacy) and achievement goals orientation (mastery-approach goal) have crucial role in predicting academic achievement in students with intellectual disability.

Key words: Personality factors, Motivational Strategies, Achievement Goals Orientation, Academic Achievement, Intellectual disability.

Introduction

Acquaintance with intellectual disabled students is helpful for recognizing them, also for planning and providing educational resources (1). These students are facing more problems in academic setting in comparison to normal students. To explore these students and using appropriate strategies will improve their educational and academic achievement (2, 3).

Many studies have indicated that the relation between intelligence and academic achievement is unexpected. As far as the role of cognitive variables reduces in prediction of academic achievement, the contribution of personality variables will increase (4). One of the characteristics that affects academic performance is personality. Personality is a set of stable and organized traits which distinguishes an individual from others. Schultz proposed that personality is consisting of five factors: Neuroticism, extroversion, openness to experience, agreeableness and conscientiousness (5, 6).

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Previous results are contradictory about the relationship between personality factors and academic achievement. Some other studies have mentioned, a positive and significant relationship between agreeableness, neuroticism and academic achievement, but others have showed no significant correlation between extroversion, conscientiousness, openness to experience and academic achievement (7, 8).

Martin reported that there is a negative relationship between neuroticism and academic achievement, also positive one between conscientiousness, openness to experience, extroversion and academic achievement in intellectual disabled students (9). Review of literature shows that there is no linear relation between personality factors and academic achievement. Some studies have shown that motivational strategies are determinant factors for academic achievement. According to Pintrich, motivational strategies are consisting of three components such as resources management, self-efficacy and test-anxiety. Some studies have indicated positive and significant relationship between academic achievement and variables like time management, study environment, effort regulation, peer learning and help seeking (10, 11). Also, the other studies revealed no significant relation between time and place management, effort regulation, help seeking and academic achievement (12). However, research on children with intellectual disability has shown positive and significant relationship between management strategies and academic achievement (13-15). In addition, it is reported that there is positive and significant relationship between academic achievement and self-efficacy (15, 16), also negative relation between test-anxiety and academic achievement in students with intellectual disability (17, 18, 19, 20, 21, 22, 23).

Achievement goals are considered as one of the dimensions of motivational strategies. Educational theorists have mentioned a few goal-oriented approaches. For example Elliot and Pintrich introduced goal achievements as a matrix with two dimensions. Four types of goal approaches can be recognized based on the matrix as follows: mastery-approach, mastery-avoidance, performance-approach, performance-avoidance (24, 25).

Students with mastery-approach goals focus on learning, task master, learning of new skills, developing or improving their competencies, concentration on understanding and insight (26,19,27-28). In contrast, students with performance-approach goals focus on avoidance of misunderstanding, no gain control over the task or profit from wrong criteria (27-31). More have shown that there is a positive relationship between mastery-approach and performance-approach goals with academic achievement and a negative relationship between performance-avoidance goal and academic achievement (12, 14, 28, 31-38). Although many studies have examined the role of personality factors, motivation strategies and achievement goals orientation on academic achievement in normal students, the role of these variables in students with intellectual disability has not been known. Additionally, the contribution of these variables in academic achievement has not been already studied. In fact, the purpose of present study is to explain the simultaneous role of personality factors, motivational strategies and achievement goals orientation in predictive model for variations of academic achievement.

Materials and Methods

The study was approved by Ethics Committee of University of Social Welfare and Rehabilitation Sciences. This was a descriptive-analytical correlation study. From 272 secondary school students who were educating in exceptional centers in Tehran Province, 200 subjects (126 females and 74 males) were selected randomly by stratified sampling method. They were 16 to 20 years old. All students completed Neo Big-Five Factor Personality Inventory (NEO-FFI; Costa and McCrae, 1992), Motivational Strategies for Learning Questionnaire (MSLQ; Pintrich) and Achievement Goals Questionnaire-Revised (AGQ-R; Elliot and Murayama) (10, 39).

NEO-FFI: this inventory was made by Costa and McCrae and is a personality test with two short-forms (60 and 44 items). In present study, a 44-items form was used which measured five factors such as neuroticism, extroversion, openness to experience, agreeableness and conscientiousness. Each item was scored according to Likert's five-degree scale. Its reliability was reported 0.90, 0.78, 0.76, 0.86, and 0.90 for above-mentioned five factors respectively (6).

MSLQ: the questionnaire has 32 items which was made by Pintrich and consisted of resource management strategies and motivational strategies. The first section includes time management and study environment, effort regulation, peer learning and help seeking; the second one includes self-

efficacy and test-anxiety. Each component is scored according to Likert's seven-degree scale. Its reliability was 0.75, 0.65, 0.65, 0.58, 0.90, and 0.78 for the above-mentioned components in order (10).

AGQ-R: the questionnaire has 12 items which was made by Elliot and Murayama and scored based on Likert's seven-degree scale. It is consisted of 4 goals such as: mastery-approach, mastery-avoidance, performance-approach, performance-avoidance and their reliability have reported 0.84, 0.88, 0.92, and 0.94 for each goad respectively.

In present study, the reliability coefficients and of three questionnaires have calculated by Cronbach's alpha and shown in table 2.

The mean scores of all students in Science and Hygiene, Religion and Life, and Mathematics courses were collected in second semester and it was considered as a criterion of their academic achievement. The data that was obtained was analyzed by using the statistical software SPSS version 16. Mean, standard deviation, correlation coefficient, stepwise regression analysis was used.

Results

Two hundred students with intellectual disability (126 females and 74 males) from exceptional educational centers (aged from 16-20 years old) participated in the study. They were from middle socio-economical class. Academic level of their fathers (73.5%) and mothers (67.5%) were diploma or higher education. Mean and standard deviation of variables has been shown in table 1.

Table 1. Mean and standard deviation of variables (n=200)

Variable	M	SD
neuroticism	3.24	1.62
extroversion	3.95	1.78
agreeableness	3.62	1.45
openness to experience	2.96	1.27
conscientiousness	4.07	0.98
time management & study environment	3.44	1.70
effort regulation	3.56	1.43
peers learning	2.17	1.36
help seeking	5.78	0.87
mastery-approach	6.15	0.96
mastery-avoidance	4.64	1.78
performance-approach	5.80	1.28
performance-avoidance	4.06	1.83
self-efficacy	5.36	1.34
test-anxiety	4.53	1.69
academic achievement	15.36	3.86

In table 2 correlation matrix and variables reliability of research has been determined.

Table 2. Correlation matrix and variables reliability of research (n= 200)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
neuroticism	0/85															
extraversion	-0/26	0/80														
Agreeableness	-0/43**	0/45**	0/76													
Openness	-0/09	0/03	0/07	0/79												
conscientiousness	-0/40**	0/32**	0/38**	0/22*	0/92											
Time management and study environment	-0/07	0/11	0/13	0/27**	0/09	0/73										

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
effort regulation	-0/18**	0/06	0/08	0/12	0/19*	0/26**	0/62									
peers Learning	-0/03	0/32**	0/24**	0/16*	0.06	0/05	0/13	0/76								
Help seeking	0/12	0/23**	0/13	0/27**	0/12	-0/04	0/07	0/15*	0/64							
Mastery-Approach	-0/17*	0/14	0/06	0/27**	0/22**	0/36**	0/29**	0/10	0/09	0/74						
Mastery-Avoidance	0/07	0/12*	0/05	0/23**	0/04	0/24**	0/20*	0/13*	0/08	0/46**	0/76					
Performance-Approach	0/12*	0/32**	0/12	0/06	0/09	0/18*	0/23**	0/25**	0/32**	0/26**	0/29**	0/69				
Performance-Avoidance	-0/16**	0/11	-0/09	-0/02	0/12	0/14*	0/18*	0/20**	-0/07	-0/02	0/53**	0/34**	0/82			
Self- Efficacy	-0/36**	0/17*	0/39**	0/32**	0/29**	0/36**	0/27**	0/11	0/08	0/36**	-0/22**	0/05	-0/23**	0/95		
Test -Anxiety	0/47**	-0/27**	0/11	-0/07	-0/13**	-0/04	-0/09	-0/25**	0/16*	0/06	0/52**	0/22*	0/42**	-0/27**	0/85	
Academic Achievement	-0/42**	0/12	0/15*	0/08	0/52**	0/09	0/15*	0/05	0/36**	0/42**	-0/13	0/15	0/17	0/56	-0/34**	0/76

The reliability coefficients are on the major diameter. * P <0 / 05 ** p <0 / 01

As indicated in table 2 the lowest correlation coefficient was 0.02 for performance-avoidance and mastery-approach, also for performance-avoidance and openness to experience. The highest correlation coefficient was 0.56 for openness to experience and academic achievement.

Table 3. Summary of stepwise regression analysis

Step	Predictive variables	R	R^2	Change R	Change F	Df1	Df2	sig
1	Self-efficacy	0.56	3.13	0.313	66.08	1	97	0.001
2	Self- efficacy and conscientiousness	0.62	0.384	0.071	14.87	1	96	0.001
3	Self-efficacy, conscientiousness and mastery-approach goal	0.65	0.422	0.038	9.65	1	95	0.002
4	Self-efficacy, conscientious, mastery-approach goal and neuroticism	0.67	0.448	0.26	8.07	1	95	0.005

As it is reflected in table 3 in 1st step, self-efficacy had the greatest role in predicting academic achievement (r=0.56). In other hands, 31.3% of academic achievement can be explained by changes in self-efficacy. In 2nd step, after Self-efficacy, conscientiousness entered in the equation (r=0.62). So, these two variables could be explained 38.4% of variation of academic achievement. In 3rd step, besides of conscientiousness and self-efficacy, mastery-approach goal entered in the regression equation (r=0.65) which means these three variables predicted 42.2% of changes in academic achievement. In 4th step, Self- efficacy, conscientiousness, mastery-approach goal and neuroticism entered in the equation (r=0.67). These four variables can be predicted 44.8% of changes in academic achievement.

Table 4. Standard and not standard coefficients and partial and semi partial correlation of variables in the stepwise model

Model	Variable predictive	coefficients regression		sig	correlation		
		Not standardized ß	standardized Beta			partial	semi partial
1	self-efficacy	1.75	0.56	0.001	0.56	0.56	0.56
2	self-efficacy	1.83	0.59	0.001	0.56	0.62	0.62
	conscientiousness	0.92	0.38	0.001	0.52	0.45	0.42

Model	Variable predictive	coefficients regression		sig	correlation		
		Not standardized ß	standardized Beta			partial	semi partial
3	self-efficacy	1.65	0.53	0.001	0.56	0.55	0.52
	conscientiousness	0/98	0/39	0.001	0.52	0.47	0.43
	mastery-approach	0/85	0/34	0.002	0.42	0.37	0.32
4	self-efficacy	1.57	0.52	0.001	0.56	0.53	0.51
	conscientious	0.85	0.37	0.001	0.52	0.44	0.39
	mastery-approach	0.78	0.31	0.002	0.42	0.34	0.29
	neuroticism	-0.74	-0.21	0.005	-0.42	-0.22	-0.18

With entrance of variables in 4th step, self-efficacy had the greatest contribution in predicting changes in academic achievement with standard beta equals 0.52. Conscientiousness had positive and effective role in predicting academic achievement with standard B = 0.37. Then, mastery-approach goal had positive and effective role with standard B = 0.31. At last, neuroticism had negative and effective role in predicting academic achievement with standard (B = -0.21).

Discussion

The results of the study showed that openness to experience, conscientiousness, effort regulation, help seeking, mastery-approach, performance-avoidance goal, and self-efficacy had positive and significant relationship with academic achievement. Also, neuroticism and test-anxiety had negative and significant relationship with academic achievement. This finding was consistent with the results of some studies (12, 15, 16, 19, 20, 22, 24, 39). In a predictive model, only self-efficacy, conscientiousness, mastery-approach goal and neuroticism can be explained for academic achievement. Also self-efficacy had the greatest contribution among the other variables. This finding was consistent with some previous studies (28, 31, 35-37).

Among NEO-FFI factors, only the openness and conscientiousness had a significant and positive relation with academic achievement. Also neuroticism had a significant negative relationship with academic achievement. These findings are consistent with a few of studies (8, 9, 10) and inconsistent with Kardum and Krapic study (7). It can be explained that positive relationship between openness to experience and conscientiousness with academic achievement is due to the mediating the role of some characters such as: effort, regularity, perseverance, progress and responsibility. Also, the negative and significant relationship between neuroticism and academic achievement can be explained based on anxiety, especially in stressful situations like tests.

Only effort regulation and help seeking from resource management strategies had a significant and positive relationship with academic achievement, that was in aggreement with some studies (11, 13, 14, 15) and inconsistent with the Abedini's study (12). This finding is probably because of students with intellectual disability make effort to get helping from key people such as teachers, consultants and managers in comparison to their normal peers. Finally, the results showed that self-efficacy has significant and positive relationship with academic achievement and it was the most effective variable in prediction of academic achievement. This was consistent with many studies which have done in normal students (12, 15, 16, 19, 20, 22, 24, 39).

The results showed that academic achievement in students with intellectual disability looks like in normal students and is dependent to many variables. The present study have examined the relationship between personality factors, motivational strategies and achievement goals in predicting academic achievement of 2nd grade high school students with intellectual disability. The results proposed that self-efficacy, conscientiousness, mastery-approach goal and neuroticism were the most important predictive factors in academic achievement. Self-efficacy had the effective role in predicting of academic achievement. It also showed that intellectual disabled students will be successful in acquiring higher education if: 1) they accept that are more capable to do their homework, 2) in order to accelerate their tasks, be more disciplined, 3) in

order to facilitate learning and achieving their understanding and insight, they should be more dependent to inner standards instead of compete and get ahead of other students, 4) experience less anxiety, tension, impulsivity and depression.

As far as present study used correlation method, the relations which were shown could not be considered as a causal factors and it is probable that these results and relationships are due to the effect of other variables. Other limitation of this study is the usage of self-reporting questionnaires. Maybe, the students didn't feel responsibility to answer correctly and honestly because of avoiding stigma or not being accepted by the community.

It is recommended that personality factors, motivational strategies and achievements goal orientation could be very helpful in education instruction of students with intellectual disability with intellectual disability in primary schools and various categories of exceptional people.

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