Investigating the Role of Personality Traits as Predictor of Academic Success: A Case Study of Secondary Level Students in District Mianwali, Pakistan

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ABSTRACT

The educational position of any person is mainly portrayed through the academic success. Within the other factors, personality traits may also be the one determinant of individuals' low or high academic success. An attempt in this regard was made to examine whether any relationship of students personality traits and academic achievement at secondary level exist or not. Male and female students of 10th grades enrolled in public and private sector schools in district Mianwali were taken as population of study. 930 students were selected as sample for the study by using stratified random sampling technique. The study revealed positive relationship for Agreeableness, Neuroticism, Openness, and negative correlation for extraversion, consciousness personality trait and academic achievement. All five personality traits were found to be the strong predictors of academic achievement at secondary level.

Keywords: Personality traits, Big Five inventory, Academic achievement, Openness, Agreeableness

INTRODUCTION

Education is essential for individuals and academic achievement is a major component of it. It is significant to identify why some learner perform better academically and achieve good grades as compared to their fellow students. Researchers focused on detection of factors that make students unique from each other and that were associated with their high and low academic performance, especially the contribution of personality traits in this regard. The findings of (Chamorro-Premuzic & Furnham, 2003) suggest that academic achievement of students is affected mostly by the personality traits than other class room strategies and teaching activities going on within the school setting as for as home and community (community, peer group, home environment and parental support, student use of out-of-school time) is concerned.

Studies conducted by Reale, & Dingemanse, (2010) allow researchers to study Individual domains of personality characteristics, rather than separately examining thousands of particular attributes that make each human being individual and unique. Among all factors, researchers focused on how our personality traits are linked to the way we behave or perform.(Johnson, 2000)

The greatest degree of connection, however, has been around the big five personality traits (Costa& McCrae, 1989; Goldberg, 2005). Goldberg termed it "Big Five" in order to portray the personality factors we commonly refer today as Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. The Big Five framework is used to measure personality traitsin order to find possible solutions to the problem of achievement differences amongst secondary discipline students (Rindermann, &Neubauer, 2001;Goldberg, 2005; Salgado ,2002)

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More recent research of Sanchez-Marin, Rejano-Infante, & Rodriguez-Troyano, (2001) suggests that extraverts exhibit low performance in academic settings because of their distractibility, sociability. Similar report was presented by Sanchez-Marin et al (2001) that extraverts underperform and tend to fail their courses more frequently. Jeksun and Rushton(2006) report differences in the social context of traditional classroom The difference in social context that Jenkins and Downs are referring to is one of the main reasons of low performance. Farsides and Woodfield's (2003) research on Big Five factors showed that extraversion had no relationship with academic success.

Poropat , (2009) and his colleagues also reported that extraversion did not appear to be an important factor of academic performance .Farsides and Woodfield (2003) attempted to explain some of the discrepancy in the literature regarding personality variables and their ability to expect academic success. Researchers used different criteria for measuring academic success, ranging from course-specific evaluations, final year examination scores, grade point average, and assessment criteria, different studies have permitted considerably different methods to measure relationship of personality and academic achievement. A number of students are perceived differently by teachers on account of their interaction, behavior, quality of assessment, classroom observation , this perception is essential for their success and ranking in the prescribed class room.

Few researches describe the correlation involving extroversion personality character and score in different subjects and found that it depends on the nature of evaluation process ,in which verbal examination, M.C.Qs assessment and collaborative activity task were consider the main cause of high levels of extroversion among students at secondary level (Chamorro-Premuzic, Furnham,2006 but Funder 2006)

More research investigations done to persuade Personality traits of students and their educationalaccomplishment. Correlations between "personality traits and academic achievement" have been investigated by many researches. Hurtz& Donovan, (2000) conducted a research on secondary school students and showed that both "conscientiousness" as well as "agreeableness traits", similarly the relations of "conscientiousness" plus "agreeableness" showed significant correlation to students' performance. Highly conscious and agreeable Students performed better than fellow students on scale of personality measurement.

A study conducted by Johnson (2008) and Chamorro-Premuzic and Furnham (2003a; 2003b) to examine the correlation between personality and academic achievement establish the fact that "personality traits" such as neuroticism, conscientiousness, and Extraversion have significant correlation with examination assessment, which highlighted more than 10-17percent unique difference in personality characters and academic performance.

Research studies of Funder, (2006) concluded that openness was a considerable interpreter of academic success, while the relationship between openness and academic achievement could be understood in terms of the correlation between openness and intelligence.

Likewise, according to Rindermann, &Neubauer,(2001),"Neuroticism" have had unreliable special effects on academic achievement, from being optimistic toward pessimistic and from not being valuable to be noteworthy.

The outcome of neuroticism on academic achievement might strengthen the work done by Furnham et al., 2006.in term of the moderating influence of factors, such as the kind of measurement technique, the level of tension along with intellect (see also Chamorro-Premuzic et al., 2006). Beyond such amendment, Trapmann et al. (2007), in discussion of research conclusion on personality traits and academic achievement, argued that personality traits have autonomous and incremental influence on academic performance' (p. 116). According to the investigation, "conscientiousness" is referred as the mainly strong interpreter of academic success. More conscious are individuals toward success, higher will be their achievement. "Big Five personality traits" particularly conscientiousness and openness seem to be the most excellent personality interpreter of academic success respectively.

Rouse & Barrow. (2006) also highlighted some of the problems concerning the five factors and their use in research studies. On its base, researchers have used different items to measure the academic performance, Academic performance criteria differ to a large extent and may have unrelated or even conflicting relationships with the independent variables, i.e. the big five factors.

The societal and behavioral components (examples of variables Includes learners' optimistic thoughts, presence of disrupting behavior, Appropriate classroom setting with learning strategies, collaboration with teaching staff as well as class fellows and friends is chief factor in influential natural world of teaching and learning. paradigm of learning factors in the motivational techniques and affective domain include Attitude for learning institutions, teaching staff along with subject matter of study material; inspiration ,enthusiasm and incentives for ever-lasting Learning, liberty help individuals with respect to learning goals; and academic performance in the subject area.

The "Big Five Personality traits" are one of the extensively in use instruments in predicting performance. The mainstream of the studies in the field are conducted to focus on academic performance,(Poropat , 2009) .Though lot of researches have been done on this topic, Hurtz& Donovan, 2000.examine the correlation of "the big five personality traits and academic performance" giving all attention to "big five", so that he could find the solution of several issues that have not been settled yet and that there are few conclusion only that can be relevant in a large variety of contexts. Most of the findings are context-specific and have little or no predictive strength outside that context Research studies done by researchers on "personality traits & academic success "predicted traits of learner as an imperative aspect of academic success at secondary level. The study conducted by Farsides and Woodfield, (2003) with the aim to facilitate academic success of learner is predicted by their non-verbal cognitive abilities and evaluation by their (pre)school teachers of their conscientious attitude-openness in school.

In view of the above the present study aimed to uncover with the help of specific personality traits whether there exist any relationship of personality and academic achievement of students or not. Hopefully the findings of this study would equip the professionals and parents with the information about individuals with different personality and how they can be dealt in different situations. Specific objectives of the study were:

1. To compare the differences in academic achievement of students having different personality traits.
2. To measure relationship between different personality traits and academic achievement of students.

METHODOLOGY

The study was descriptive in nature, so quantitative research approach was used to study the phenomenon under consideration. Students of secondary level enrolled in 10th grade constituted the population of the study. Keeping in view the time and resources constraints, the study was delimited to the Students Tehsile mianwali of District Mianwali.930 students were selected as sample of study by using stratified random sampling technique. Out of 930, 748 students responded resulting in 80% response rate.

To meet the objectives of research, data was gathered by using Big five (BFI) Personality Inventory consisting of 44-items was used (see Soto and John ,2009)to measure personality of Students. Student' academic achievement (9^{th} class board result) was taken from annual result of SSC part -1 session 2014.

Urdu translation of Big five inventory was used to make it easily understandable for respondents after proper certification, to gather data, instrument was validated through expert consultation and reliability of the questionnaire was determined through pilot testing on 30students of class 10^{th}. Alpha Coefficients value ranged from .73 to .85.

The Big five (BFI) Personality Inventory (see Soto and John, 2009) a 44-item survey questionnaire that is used to measures the "Big Five" personality traits, Openness, Conscientiousness, Extraversion Agreeableness, Neuroticism ,statements of questions were intended to answer simply about typical behavior on five-point Likert scale, range from 'strongly disagree' to 'strongly agree'. use to assess the personality traits of the pupils ,as well as to check the relationship with the academic achievement in the form of ninth class result of board of intermediate and secondary education.

DATA ANALYSIS

After gathering and compiling data it was sorted into personality traits, as well as coded in a coding of SPSS 13.0. All negative statements were reversed before applying various statistical tests. Then it was analyzed by mean of different tests. Then Pearson product-moment correlation coefficient (r) was used to calculate the relationship between personality traits and academic achievement. A linear regression was used to determine predictable nature of different traits for academic achievement.

Table 1. Correlations between openness personality and academic achievement

Personality Trait	*r*	*sig*
Openness	.314	000

The table 1 Shows that there exist significant relationship between students' academic achievement and "openness personality trait" with $r=.314, p<0.01$,

It indicated a strong correlation between openness personality trait and academic achievement, in other words, higher the level of openness personality trait, higher will be the academic achievement of students at secondary level.

Table 2. Correlations between consciousness personality trait and academic achievement

Personality Trait	*r*	*sig*
Consciousness	.172**	000

The table 2 Shows that there exist significant relationship between students' academic achievement and "consciousness personality trait" with r=.172**, $p<0.01$.It indicated a strong correlation between consciousness personality trait and academic achievement, in other words , higher the level of consciousness personality trait, higher will be the academic achievement of students at secondary level.

Table 3. Correlations between Extraversion personality and academic achievement

Personality Trait	*r*	*sig*
Extraversion	-.075*	000

The table 3 Shows that there exist negative relationship between students' academic achievement and "Extraversion personality trait" with r=-.075*, $p<0.05$, It indicate a strong correlation between extraversion personality trait and academic achievement, in other words , higher the level of extraversion personality trait, higher will be the academic achievement of students at secondary level.

Table 4. Correlations between Agreeableness personality and academic achievement

Personality Trait	*r*	*sig*
Agreeableness	.146**	000

The table 4 Shows that there exist significant relationship between students' academic achievement and "Agreeableness personality trait" with r=.146**, $p<0.01$.It indicate a strong correlation between Agreeableness personality trait and academic achievement, in other words, higher the level of Agreeableness personality trait, higher will be the academic achievement of students at secondary level.

Table 5. Correlations between Neuroticism personality and academic achievement

Personality Trait	*r*	*sig*
Neuroticism	.263**	

The table 5 Shows that there exist significant relationship between students' academic achievement and "Neuroticism personality trait" with r=.263**, $p<0.01$. It indicate a strong correlation between Neuroticism personality trait and academic achievement, in other words , higher the level of Neuroticism personality trait, higher will be the academic achievement of students at secondary level.

Table 6. Regression Analysis

Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
1	.485	. 235	.230	18.80

Adjusted R Square value .235 shows that about 23% of the variance in the dependent variable (academic achievement) can be predicted from Independent variables.

Table 7. Regression Analysis

Model		*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
1	Regression	80732.122	5	16146.424	45.643	.000^{a}
	Residual	262840.006	743			
	Total	343572.128	748			

The level of significance in above table indicates that the combinations of variables significantly predict variance in the dependent variable

Table 8. Regression Analysis

Model		*Unstandardized Coefficients*		*Standardized Coefficients*	*t*	*Sig.*
		B	*Std. Error*	*Beta*		
1	(Constant)	-26.361	8.565		-3.078	.002
2	Open Average	6.156	.962	.218	6.396	.000
3	Conscious Average	26.203	2.158	.550	12.140	.000
4	Extra Average	-13.507	1.628	-.331	-8.298	.000
5	Agree Average	-4.967	1.443	-.139	-3.443	.001
6	Neuro Avarege	14.451	1.459	.401	9.904	.000

a. Dependent Variable: Academic Record

Interpretation of Linear Regressions

Multiple regression procedure was used to predict academic achievement on basis of different personality traits. Academic achievement was regressed on following personality traits: such as *openness*, *consciousness*, *extraversion*, *agreeableness*, and *neuroticism*. These predictors accounted for 23% total variance in academic achievement, which was significant, $F(5,743) = 45.64$, $p < .001$. The standardized β coefficients were used to test the significance of each predictor. Openness, consciousness, extraversion, agreeableness and neuroticism predictors demonstrated significant effect on academic achievement of students at ($\beta = .218$, $p < 0.001$), ($\beta = .550$, $p < 0.001$), ($\beta = -.331$, $p < 0.001$), and ($\beta = .401$, $p < 0.001$) respectively. The linear regression equation to predict academic achievement through five personality traits is given using un standardized regression coefficients as,

$$\begin{aligned}\text{Academic achievement}&\\ &= -26.36 + 6.15(\text{openness}) + 26.20(\text{consciousness})\\ &- 13.50(\text{extraversion}) - 4.96(\text{agreeableness}) + 14.45(\text{neuroticism})\end{aligned}$$

CONCLUSIONS AND DISCUSSIONS

Findings from this study revealed that positive relationship for openness personality trait consciousness, agreeableness, neuroticism personality and academic achievement was found. Positive relationship between neuroticism, openness to experience and agreeableness personality traits and academic achievement was partially supported by previous literature on both correlation and experimental research studies (see Matthews et al., 2003, for a review). (see Bathelemy, 2009).

An interesting and unexpected result was related to extraversion personality trait, negative significant correlation between extraversion personality trait and academic achievement of students at secondary level was found. In this regard the study results differ the study of Mathews, Darry & Whiteman. (2003) and the study by Premuzic- Chamorro &Furnham, 2006) Both these studies were conducted in different cultural context ,where positive and no significant relationship was found, thus it can be inferred here that in Pakistani context the present study have equally failed to produce positive significant relations between extraversion personality trait and academic achievement. One reason, behind this might be that the extravert individuals might be betrothed in other social and impetuous tasks, and spent less time to their studies. Because of their sociability, and impulsiveness. Due to social nature, extraverts pay less attention to their studies. So greater their extravert nature, lower will be their academic success

The positive correlation of consciousness personality trait and academic achievement for this research findings include association, caution, regulation, objective setting and high level of attentiveness (items on big five inventory) possessed by conscientious students .This view is also supported by Wolfe and Johnson (1995). Considerable amount of research has exposed that conscientious pupils are more consistent, harder functioning (items of big five inventory) and conscientious students cannot be distracted easily (consciousness personality trait item no.43 on Big five inventory) and they perform better than their fellows on this trait (Chamoro-Premuzic & Furnham, 2006).

The significant relation between academic achievement and Neuroticism has usually been explained in terms of stress and anxiety under test (i.e. examination) conditions (Zeidner& Matthews, 2000), although such traits may affect academic performance in a more general way, i.e. not just through exam performance. Such kind of individuals infer usual ordinary situation as threatening and disturbance. Exam tension is linked with such students and affects them leading them to remain persistent for better achievement (Funder, 2001.)

Finding exposed positive correlation between agreeableness personality trait and academic achievement, it explains that learners who are highly agreeable performed significantly better than the fellows. Agreeable persons are supportive, well-mannered, pleasing and helpful to others (Analysis of items foe agreeableness personality trait on big five inventory) . This individuality makes it easy to intermingle with other learners and make them able to learn from each other. The cooperative and caring nature of the exceedingly agreeable persons makes it easy for them to be expected help and benevolence from fellow students as well.

Looking at the checklist items of these traits from the BFI (see Costa & McCrae, 1992), it may be suggested that the agreeableness nature of individuals may have any association for a learners' study habits. It is in accordance with Thorndike law of readiness.

All big five personality traits (openness .consciousness. extraversion .agreeableness, neuroticism) were found to best predictors of academic achievement. Looking at the checklist items of these traits from the BFI (see soto& John, 2009) extravert are thought to be talkative, social, responsible and outgoing persons. The responsible aspect of this trait make it best predictor of academic performance.

Thus neurotic individuals may be less able to control certain desire (i.e. anxiety. examination fear) that may make it best predictor of academic success. Agreeableness personality trait might be linked with learning discipline. This may explain why the predictive effect of academic performance by agreeableness personality trait increases in the linear regression. Finally, the regression performed in the present study represents those personality traits as measured by the BFI can be very helpful in the prediction of academic achievement at secondary level. As supported partially by the results of earlier researches(see Marin-Sanchez et al., 2001, for a review) in which big five personality traits can be thought as predictors of academic achievement when studied with some other variables (Allen ,2000). These five predictors accounted for 23% total variance in academic achievement. These results may therefore re-open the debate about whether big five personality traits are to be preferred to maximize the prediction of human performance (mainly in academic settings)

The present study is taken for finding the relationship of specific personality traits and school success of secondary school pupils. This research study will reveal facts, how specific personality traits have great impact on the learner's achievement in various subjects. It will help the teachers to bring variety in their instructional methods and teachers will also understand how to make teaching learning process more effective. The study will facilitate the teachers to improve achievement level of students of specific personality traits.

The future researchers would also have an advantage to seek guidelines by the study to their great concern. The study will provide an opportunity to understand, cognitive, psychological and social behavior perspectives of personality development to enhance the academic achievement of students successfully. The administrators/principals would also be benefited by the study, to have a better understanding of how personality traits and academic achievements can affect their institutional repute. The study will also enable the instructors to easily understand the nature of pupil according to their personality, and diagnose the difficulties of the pupils regarding their academic achievements.

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