

A study of adolescents' academic achievement in relation to their personality traits and age

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Abstract

This study intended to test the proposition that there is a relationship between teenage academic success and personality traits. Furthermore, the study aimed to assess the influence of teens' age on their academic achievement. Two hundred young individuals from the Darbhanga district of Bihar, India, who were engaged in academic programs at the intermediate to post-graduate levels made up the sample. Purposive-cum-incidental sampling is a sample approach that was used to choose the participants. The individuals' academic achievement was ascertained by the researchers by adding up all of the grades they had earned throughout the preceding three years. The present study employed the Big Five Inventory (BFI), a psychological measure that is intended to assess the five primary personality qualities, namely openness, conscientiousness, extraversion, agreeableness, and neuroticism. The scale created by John & Srivastava (1999) uses forty-four items. The study concluded that there was a positive association between academic achievement and three personality traits: agreeableness, conscientiousness, and openness. Nonetheless, there was very little impact of age on teens' academic achievement.

Keywords: Academic Achievement, Big-five Personality Traits, Adolescents, and Age.

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An individual's level of academic achievement is the single most important factor to consider while evaluating their educational development in this modern day. Providing pupils with an education is the major goal of all educational institutions, including schools and universities, and the efficacy of the education that is provided is evaluated through the use of examinations. It has developed into a measure of what constitutes academic excellence. The degree of proficiency in educational work that is obtained following the conclusion of a course or piece of study is referred to as academic achievement. It is the subject that is the primary emphasis of every individual subject that is taught in educational institutions. The goals of institutions are intimately connected to this aspect of the situation.

The term "academic achievement" is a combination of two words: "academic" and "achievement." The first word, "academic," refers to all subjects taught in schools or colleges, as well as the arts. The second word, "achievement," refers to the level of knowledge or skills that students acquire while attending schools or colleges, and it is measured by the scores that are placed on the examinations that are given to the students.

Academic achievement is defined as "the knowledge attained or skills developed in School subjects, typically designated by the test scores or by marks assigned by a teacher or by both." This definition was provided by Good (1959), who defines the phrase as "academic achievement."

"Academic achievement" was described by Trow (1960) as "the attained ability or degree of competence in school tasks with the majority of the time being measured by standardised tests and expressed in grades or units."

Regarding the contrary, Hawes and Hawes (1982) stated that "the term academic achievement refers to an instructional system of formal education with within the context of school, college, or university."

On the other hand, according to Hurlock (1981), achievement is defined as the scores in the yearly examination. A person's skill level, the breadth and depth of his knowledge, or his degree of competency in a particular area of learning or conduct are all evaluated or measured by this method. In order to evaluate an individual's performance, accomplishment tests are used to measure and assess it, and then the results are compared to the criteria established for tests. Creating or standardising these examinations is a possibility.

In light of this, the information or skill that students learn in accordance with the curriculum of the course, which is evaluated based on the scores or grades, serves as the foundation for further study or employment within the context of the existing institutionalised education system in India.

Big-five Personality traits

The five most significant traits that are used to characterise a person's personality are referred to as the "big five." Fiske's (1949) idea is the source of the major five personality traits. Subsequently, the concept was developed by other scholars, including McCrae & Costa (1987), Goldberg (1981), Norman (1967), and Smith (1967).

The acronym for the big five personality traits is OCEAN, which includes the following attributes:

(i) Openness: This quality encompasses insight, adventure, little or no risk aversion, inventiveness, and creativity. Imagine someone who is fearless when it comes to taking chances in life, who is creative and imaginative when trying new things, and who finds enjoyment in engaging in risky activities. These individuals are referred to as having a high openness characteristic. These individuals are always open to new concepts, ideas, experiments, and ways of thinking. Individuals with high openness tendencies venture outside of their comfort zones to discover new things and find solutions to their difficulties. Conversely, a person with

a low openness attribute will act conventionally and never experiment with novel concepts or ideas.

(ii) Conscientiousness: This quality encompasses traits like goal-oriented conduct, a high degree of thinking, and effective impulse control. When someone is diligent, they prefer to work on a set schedule. They are aware of the type of mental activity they are engaged in and the potential outcomes. They truly detest delay and never act without first creating a solid strategy. Conversely, those who score poorly on this feature are frequently observed to put off doing their task. When faced with deadlines, timetables, or routines, they get restless.

(iii) Extraversion: Known for its talkativeness, social skills, aggressiveness, and high degree of expressive ability, this feature is quite recognisable. Another way to spell it is "extroversion." An extrovert is someone who engages in social activities and likes being around other people. They are well acquitted and have many friends. Living alone is not what they desire. Because they communicate well and are chatty, extroverts are naturals at quickly forming new friendships. Conversely, some persons are referred to be introverts since they are the opposite of extroverts. These folks score poorly on the extroversion scale. These reclusive individuals dislike being among other people. They adore being by themselves and feeling alone.

(iv) Agreeableness: Individuals with high agreeableness levels in their personalities exhibit kindness, compassion, trust, and affection for others. Their prosocial activity is a direct result of their empathy for others. Disagreeableness is the antithesis of agreeableness. Many of the actions shown by this type of individual are not acceptable in society. They exhibit manipulation, nasty behaviour towards others, a lack of empathy, and a lack of interest in other people's problems.

(v) Neuroticism: Individuals with neuroticism tend to exhibit emotional instability, moodiness, and sorrow. Antisocial conduct or psychological issues are not characteristics of neuroticism. It is a type of mental and physical reaction to stress and imagined dangers to an individual's

existence. Excessive neuroticism frequently manifests as worry, mood swings, and irritation. Individuals with lower neuroticism scores exhibit emotional stability, mental clarity, and seldom sadness. Instead of dwelling on the potential difficult scenario of the future, they choose to spend their time in the present.

Several studies have demonstrated that there is a considerable connection between the characteristics of the student's personalities and the level of academic accomplishment they obtain. For instance, according to Marcela (2015), there was a positive relationship between the academic achievement of university students and the personality traits of openness and conscientiousness when it came to individuals. The traits of conscientiousness and openness appear to be particularly advantageous for achieving high levels of academic accomplishment since they tend to promote several effective learning processes. Based on the findings of Hakimi et al. (2011), personality characteristics were found to be a significant predictor of the academic success of students. According to the findings, traits were able to account for as much as 48 per cent of the variation in academic success. In a similar vein, the research carried out by Jensen (2015) discovered that one of the personality traits, conscientiousness, was shown to have a substantial association with the academic accomplishment of the students. Academic achievement was shown to have a positive link with extraversion, agreeableness, and conscientiousness, a negative correlation with neuroticism, and did not have any correlation with openness to experience, as stated by Atashrouz et al. (2008). According to the results of a stepwise regression study, only neuroticism and conscientiousness, when combined in two stages, were able to explain nine per cent of the variance in academic success.

Though personality traits and academic achievement have been the subject of several studies, such studies are lacking in the Indian context. Adolescents from Darbhanga, Bihar were studied to determine the association between personality traits and their academic achievement.

The present study has been undertaken to answer the following question:

- (i) Is there any significant relationship between personality traits and adolescents' academic achievement?
- (ii) Does the age of the adolescents play any role in their academic achievement?

Based on the facts gathered in reviewing the related literature, the following hypotheses have been formulated:

- (i) There will be a significant association between personality traits and academic achievement.
- (ii) The age of the adolescents will significantly affect their academic achievement.

Methodology

Sample

The research study was conducted on a sample of 200 adolescents who were residing in Darbhanga, Bihar. The participants in the study were students enrolled in intermediate, graduation, or post-graduation programs. The sample was selected using a purposive-cum-incidental sampling technique, and the participants were approached during their leisure periods for participation in the study. The average age of the participants was found to be 22.8 years, with a median age of 23 years. The standard deviation of the sample was calculated to be 1.765. The kurtosis and skewness of the sample were determined to be -0.003 and 0.227, respectively, indicating that the sample exhibited a normal distribution.

Upon obtaining written consent from the participants, they were provided with a questionnaire to complete. The questionnaire included the Big Five Inventory (BFI), a psychological scale designed to measure the five major personality traits: openness, conscientiousness, extraversion, agreeableness, and neuroticism. The BFI, developed by John

& Srivastava in 1999, consists of forty-four items used to assess all five personality traits. The scale has demonstrated satisfactory validity and reliability.

In addition to the personality assessment, the participants' academic achievement was also measured. Their academic performance was evaluated based on the total scores obtained in their last three examinations, which were recorded in the personal data questionnaire.

Statistical tools

Product moment correlation (r) was used in the study to measure the correlations between academic achievement and personality traits. Student t-ratio was employed in measuring the significance of the mean difference between the two groups, in other words measuring the effect of age on academic achievement.

Result and discussion

Personality traits and Academic achievement

The first research question was regarding the relationship between participants' academic achievement and personality traits. We used the product-moment correlation to assess the connection between personality traits and academic achievement. The correlation was measured in respect of all types of personality traits with academic achievement. Five correlations were calculated. Correlation between openness personality traits and academic achievement, between conscientiousness personality traits and academic achievement, between extraversion personality traits and academic achievement, between agreeableness personality traits and academic achievement, and the correlation between neuroticism personality traits and academic achievement. All correlation coefficients are displayed in Table 1.

Table 1: Showing the coefficients of correlation between academic achievement and personality traits

		Correlations					
		AA	O	C	E	A	N
AA	Pearson Correlation	1	.220**	.118	.173*	.206**	-.094
	Sig. (2-tailed)		.002	.096	.015	.003	.183
	N	200	200	200	200	200	200
O	Pearson Correlation	.220**	1	.380**	.329**	.468**	-.159*
	Sig. (2-tailed)	.002		.000	.000	.000	.024
	N	200	200	200	200	200	200
C	Pearson Correlation	.118	.380**	1	.310**	.415**	-.459**
	Sig. (2-tailed)	.096	.000		.000	.000	.000
	N	200	200	200	200	200	200
E	Pearson Correlation	.173*	.329**	.310**	1	.210**	-.080
	Sig. (2-tailed)	.015	.000	.000		.003	.260
	N	200	200	200	200	200	200
A	Pearson Correlation	.206**	.468**	.415**	.210**	1	-.342**
	Sig. (2-tailed)	.003	.000	.000	.003		.000
	N	200	200	200	200	200	200
N	Pearson Correlation	-.094	-.159*	-.459**	-.080	-.342**	1
	Sig. (2-tailed)	.183	.024	.000	.260	.000	
	N	200	200	200	200	200	200
**. Correlation is significant at the 0.01 level (2-tailed).							
*. Correlation is significant at the 0.05 level (2-tailed).							

Abbreviations:

AA – Academic Achievement

O – Openness

C – Conscientiousness

E – Extraversion

A – Agreeableness

N – Neuroticism

The table above illustrates the correlation between subjective academic achievement and different personality traits. 0.220, 0.118, 0.173, .206 and -.094 are the correlation coefficients of academic achievement with openness, conscientiousness, extraversion, agreeableness, and neuroticism personality traits. All personality traits are positively associated with academic achievement excluding neuroticism. Amongst all, the relationship of academic achievement was statistically significant only with three personality traits such as openness, extraversion and agreeableness. Their level of significance was 0.01, 0.05, and 0.01 respectively. Thus, the academic achievement of the students increases/decreases when their openness, extraversion and agreeableness personality traits increase/decrease or vice-versa. Therefore, the first hypothesis, *'there will be a significant association between personality traits and academic achievement'*, is partially accepted.

In line with our findings, Komarraju, (2011) also has reported that academic achievement and personality traits are positively correlated with each other. The findings of Geramian et al., (2011) also support the results reported above.

Age and Academic Achievement

For determining the role of age on academic achievement, a t-test was calculated. The second question was about the difference between older adolescents and younger adolescents based on their academic achievement. The sample was divided into two groups based on their age. Their median age was 23 and hence the participants aged 23 years or above were put into an older age group. On the other hand, the participants of the younger age group had ages below 23 years. Then, mean scores of academic achievement for both groups of older adolescents and younger adolescents were calculated, and then the t-test was also measured so that the difference of their mean can be tested to see if it is significant or not. Table 2 contains the resulting data.

Table 2: Difference between older and younger adolescents in terms of academic achievement

Group Statistics									
	Adolescents' age in years (Older/Younger)	N	Mean	Mean Difference	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Academic achievement	>= 23 (Older)	113	184.72	1.01	17.052	1.6	0.41	198	.68
	< 23 (Younger)	87	183.7		17.663	1.9			

Table 2 above clearly shows that the mean values of academic achievement for older adolescents and younger adolescents are 184.72 and 183.7, respectively. The value of academic achievement is higher in older boys than in younger ones and the difference is 1.01. While 17.052 and 1.6 are the standard deviation and standard error of the mean, respectively, for older participants. The standard deviation and the standard error of the mean for younger participants are 17.663 and 1.9, respectively. The t-ratio and df for the data are 0.41 and 198 which tells that the difference between the means of older adolescents and younger adolescents on account of their academic achievement is statistically not significant. In other words, age of the participants has no significant effect on their academic achievement. Accordingly, the second hypothesis, '*the age of the adolescents will significantly affect their academic achievement*', is not accepted.

Conclusion

In the course of the research, it was discovered that there is a statistically significant positive correlation between the academic success of teenagers and their personality traits of openness, extraversion, and agreeableness. There was a negative correlation between the personality characteristics of neuroticism and academic success; however, this correlation was not statistically significant. The researchers found that there was no discernible difference between

the older participants and the younger participants in terms of the impact that the age of the teenagers had on their academic performance.

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