

Academic Achievement of College Students in General and Professional Courses Shrestha Ash* and Anindita Chaudhuri**

Abstract

Achievement in any field is an area of utmost interest. A lot of importance is given to achievement in academics in India. The present study explores the relative contributions of personality (neuroticism, extraversion, openness, agreeableness, and conscientiousness), achievement motivation and meta-cognitive awareness of 160 urban and semi-urban, college-going students on their academic achievement. Purposive Sampling was done. The “academic achievement index” of each of the participants was collected which was the dependent variable measure. Stepwise multiple regression analysis showed that in case of General Stream courses, Openness and Achievement Motivation significantly predicted academic achievement. Considering Professional stream courses, Extraversion, Knowledge of Cognition, Achievement Motivation, Regulation of Cognition were significant predictors of academic achievement. The above findings have important implications in the field of Educational and Social Psychology.

Keywords: personality, academic achievement, metacognitive awareness, knowledge of cognition, regulation of cognition

Academic achievement can be conceptualized as the fulcrum, which continuously maintains the fine balance between the study load and efforts put in by students in order to gain success. Our society places high importance on academic achievement or performance of individuals. Marks and grades (both at the school and higher education levels) are of utmost value to students, their families, peers, relations, teachers, acquaintances, teachers and the society at large.

Especially in India, academic achievement is viewed as a strong predictor of a student's success. From a very early age, students are usually compelled to take up professional courses like engineering, medicine, law or management as against the general stream courses of humanities, commerce or science. The 'brighter' students are usually seen as those who end up cracking highly competitive entrance examinations and are able to secure positions in the country's top-notch engineering or medical colleges right after high school. Many spend years trying to make themselves eligible for such courses. Where lies the difference between these group of students? Do they differ in terms of personality? Do students enrolled in General Stream courses differ in terms of their achievement motivation or metacognitive awareness?

Academic achievement is usually evaluated through examinations which depict a person's procedural knowledge or declarative knowledge. A host of inter-related factors determines a student's academic achievement. Task values, ability self-concepts, goals and achievement motives are some interrelated concepts included under the umbrella of achievement motivation (Steinmayr et al., 2019). Research has brought up many correlates of GPA (Grade Point Average) which are not connected to intellect. Constructs like motivation factors, personality traits, self-regulatory learning strategies, students' personal

approach to learning, social and academic integration, social support, etc. are included here.

According to Jensen, 2015, when the Openness trait of personality is grouped with general knowledge and good test results, it binds with a deep approach to learning, intrinsic motivation, and learning goals. On the other hand, an achieving mentality (in combination with deep approach to learning, extrinsic (in combination with intrinsic) motivation, and performance goals (in addition with learning goals) are bound to high grades along with the Conscientiousness trait of personality.

Metacognition has two main parts: *knowledge of cognition* and *regulation of cognition*. According to Richardson, Bond and Abraham, 2012, metacognitive awareness is broadly related to a student's task motivation and the subsequent use of their strategies in classroom assessment. Metacognition is found to control the cognitive procedures in the learning process (Barnes & Stephens, 2019).

Objectives

To find out the significant relative contributions of neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, achievement motivation, knowledge of cognition and regulation of cognition on the academic achievement index of students pursuing Under Graduation in general and professional stream courses.

Hypotheses

1. There will be a significant relative contribution of neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, achievement motivation, metacognitive awareness on the academic achievement index (in class 12th Board Examination) of students pursuing Under Graduation in general stream courses.
2. There will be a significant relative contribution of neuroticism, extraversion, openness to experience, agreeableness, conscientiousness,

achievement motivation, metacognitive awareness on the academic achievement index (in College Semester Examination) of students pursuing Under Graduation in general stream courses.

3. There will be a significant relative contribution of neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, achievement motivation, metacognitive awareness on the academic achievement index (in class 12th Board Examination) of students pursuing Under Graduation in professional stream courses.
4. There will be a significant relative contribution of neuroticism, extraversion, openness to experience, agreeableness, conscientiousness, achievement motivation, metacognitive awareness on the academic achievement index (in College Semester Examination) of students pursuing Under Graduation in general stream courses.

Method

Description of the locale: Data was collected from various students residing in and around Kolkata, the capital city of West Bengal, India.

Duration of data collection: The process of data collection was conducted from the month of August 2017 to March 2018.

Participants: The entire sample of 160 participants (both males and females) consisted of two groups of 80 students each.

Group 1 (Students pursuing Under Graduation in General courses of study) included 80 participants with average age of 19.64 years. There were 45 female and 35 male students. The religious affiliation of the sample was: 78 belonged to Hinduism while 2 belonged to Jainism. 67 participants out of the total sample resided in urban areas of the city of Kolkata, West Bengal, while the rest were semi-urban.

All the students were enrolled in a three-year, full-time, in-campus Under Graduation courses. 47 participants were enrolled in Bachelor of Arts (Honours) courses; which included History, Sociology, Philosophy, Bengali, Economics and English. 19 participants were enrolled in Bachelor of Science (Honours) courses; which included Mathematics, Geography, Computer Science, Physiology and Zoology. The remaining 14 participants were enrolled in Bachelor of Commerce (Honours) in Accounting & Finance.

There were a total of 55 2nd Year students and 25 3rd Year students. All the students were unemployed. None of the students were married at the time of the survey. 9 participants were from the Lower Income Group, 26 were from the Middle Income Group, 42 were from the High Income Group while 3 were from Very High-Income Group. 37 participants experienced Cooperative & communicative Parenting while growing up, 22 participants experienced

Permissive parenting style while 16 experienced Overprotective and 5 experienced Authoritarian parenting in their growing years. 12 participants said that they were not interested in the present course of their study while the remaining 68 were interested in their present course of study. None of the participants suffered from any mental illness.

Group 2 (Students pursuing Under Graduation in Professional courses of study) included 80 participants with average age of 20.48 years. There were 39 female and 41 male students. The religious affiliation of the sample was: 71 belonged to Hinduism while 3 belonged to Jainism and 6 belonged to Islam. 69 participants out of the total sample resided in urban areas of the city of Kolkata, West Bengal, while the rest were semi-urban.

All the students were enrolled in full-time, in-campus Under Graduation professional or technical courses which included students enrolled in Bachelor of Technology (24 participants), Bachelor of Business Administration (12 participants) and Bachelor of Hotel management courses(14 participants). 10 participants were enrolled in M.B.B.S. course while 9 were enrolled in B.H.M.S. course. 6 participants were enrolled in B.A.L.L.B. course and the remaining 5 participants were enrolled in Bachelor of Fine Arts course (Sculpture Honours).

There were a total of 32 2nd Year students and 48 3rd Year students. All the students were unemployed. None of the students were married at the time of the survey. 7 participants were from the Lower Income Group, 27 were from the Middle Income Group, 35 were from the High Income Group while 11 were from the Very High-Income Group. 44 participants experienced Cooperative & communicative Parenting while growing up, 17 participants experienced Permissive parenting style while 10 experienced Overprotective and 9 experienced Authoritarian parenting in their growing years. 9 participants said that they were not interested in the present course of their study while the remaining 71 were interested in their present course of study. None of the participants suffered from any mental illness.

Tools

1. **NEO-FFI** (Costa & McCrae, 1992): The NEO Five Factor Inventory by Paul T. Costa, Jr., PhD and Robert R. McCrae, PhD is a version of the NEO-PI-R which consists of 60 items. It consists of five scales which measure the domains of personality. Each scale has 12 items. There is evidence of both convergent and discriminant validity for the instrument. The values of internal consistency are from 0.74 to 0.89 (Costa & McCrae, 1992).
2. **Deo-Mohan achievement motivation (n-ach) scale** (Deo & Mohan, 1985): This scale with 50 items incorporates academic factors and factors of general field of interest. The questionnaire is a self-rating type and has no time limit. The

validity of this Scale shows that the coefficient of correlation is 0.54 between this Scale and the projective test of Achievement Motivation.

3. **Metacognitive awareness inventory** (Schraw, G. & Dennison, R.S. 1994), Assessing metacognitive awareness. Contemporary Educational Psychology, 19, 460-475.: It is a self-report instrument, based on a conceptual model of metacognition with two dimensions, ie., Knowledge of Cognition (KC) and Regulation of Cognition (RC). It has 52-items. Three sub-scales are used to evaluate Knowledge of Cognition, which include procedural, declarative, conditional knowledge while Regulation of Cognition is evaluated by five subscales, including evaluation, comprehension-monitoring, planning, debugging strategies, information-management strategies. It has well defined psychometric properties, and is quite reliable as a test of metacognitive awareness given initially. It has high predictive validity for test performance as well as self-monitoring in academic tasks.

Procedure: The 3 Scales along with an Information Schedule was administered to 160 male and female students enrolled in their Under Graduation courses in various Kolkata colleges. Data was collected through purposive sampling only from 2nd and 3rd Year students. Proper instructions were printed in the Survey Questionnaire and the relevant socio-

Analysis was done taking the scores of the Neuroticism, Extraversion, Openness, Agreeableness, Conscientiousness, Achievement Motivation, Knowledge of Cognition and Regulation of Cognition as predictor variables and the academic achievement index at the Class 12th Board Examination, last College Semester and the Average of the two as the criterion variable. This was done to find out which of the predictor variables had a significant relative contribution on the criterion variable of academic achievement. Any scores in the CGPA marking scheme were converted to the percentage scale by referring to the respective scoring norms published in the university website.

Results

The results showed that in Group 1, or students in General Stream Courses, when the **Class 12 Board Examination Result** was taken as the criterion variable, **Openness** was the significant predictor among all the other predictor variables. Openness explained statistically significant proportion (8.7%) of the variance in Class 12 Board Examination result. The $R=0.295$, $R^2=0.087$, Adjusted $R^2=0.057$. Openness had a significant impact on the Class 12 Board Examination Result, $F(1,78)=7.418$, $p<0.01$. A positive correlation was found between Openness and the dependent measure, $\beta=0.295$, $p<0.01$.

On the other hand, when **College Semester Result** was taken as the criterion variable measure, **Achievement Motivation** turned out to be the

Table 1: Descriptive Statistics – Mean and Standard Deviation of the raw scores of the Group 1 and Group 2 participants in the different predictor and criterion variables.

	Group 1 Participants		Group 2 Participants	
	Mean	Standard Deviation	Mean	Standard Deviation
1. Neuroticism	26.43	6.60	22.06	5.93
2. Extraversion	24.20	6.07	22.99	7.01
3. Openness	31.69	6.62	23.19	5.70
4. Agreeableness	24.64	5.41	21.66	6.81
5. Conscientiousness	26.47	6.16	27.26	8.60
6. Achievement Motivation	111.58	19.16	120.60	26.71
7. Knowledge of Cognition	12.81	1.92	13.38	2.12
8. Regulation of Cognition	24.1	5.08	26.28	5.32
9. Class 12 Result	77.79%	13.88	78.54%	13.96
10. College Semester Result	71.25%	11.06	70.18%	14.74
11. Average Academic Achievement	74.73%	10.70	74.36%	12.01

demographic details and other details like Class 12th Board Examination and College Semester Results were acquired to be used only for the current research. IBM SPSS Version 23 was used for statistical calculations. The data collected fulfilled the criteria of linearity of the phenomenon measured, constant variance of error terms, independence of error terms and normality of the error term distribution. Hence, Stepwise Multiple Regression

significant predictor variable, with an $R=0.259$, $R^2=0.067$, Adjusted $R^2=0.055$, Achievement Motivation explained statistically significant proportion (6.7%) of the variance in College Semester Result. Achievement Motivation had a significant impact on the College Semester Result, $F(1,78)=5.599$, $p<0.05$. A positive correlation was found between the criterion measure and Achievement Motivation, $\beta=0.259$, $p<0.05$.

Lastly, when the **average of the two results** of the Group 1 students was taken as the criterion measure,

Discussion

Table 2: Analysis of Group 1

Criterion Variable	Significant Predictor	R	R ²	Adjusted R ²	F	β
Academic Achievement in Class 12 th Board Examination	Openness	0.295	0.087	0.057	7.418**	0.295
Academic Achievement in College Semester Examination	Achievement Motivation	0.259	0.067	0.055	5.599*	0.259
Average Academic Achievement	Openness	0.311	0.097	0.085	8.343**	0.311

Openness was the significant predictor variable, with R of 0.311, R²=0.097, Adjusted R²=0.085. Openness explained (9.7%) of the variance in the dependent variable measure. It had a significant impact with F

Openness dimension of personality and achievement motivation significantly predicted academic achievement index for Group 1 students or those belonging to the General Stream courses while

Table 3: Analysis of Group 2

Criterion Variable	Significant Predictors	R	R ²	Adjusted R ²	F	β
Academic Achievement in Class 12 th Board Examination	Extraversion	0.443	0.196	0.186	19.027**	0.443
	Knowledge of Cognition	0.508	0.258	0.239	13.389**	0.256
	Achievement Motivation	0.550	0.303	0.275	11.008**	0.251
	Regulation of Cognition	0.584	0.341	0.306	9.701**	-0.268
Academic Achievement in College Semester Result	Knowledge of Cognition	0.333	0.111	0.1	9.745**	0.333
Average Academic Achievement	Knowledge of Cognition	0.406	0.165	0.154	15.431**	0.406
	Achievement Motivation	0.502	0.252	0.233	12.976**	0.300

(1,78)=8.343, p<0.01 and a positive correlation was found between Openness and the average academic performance with β=0.311, p<0.01.

On analysis of the Group 2 data set, it was found that when Class 12 Board Result was taken as the criterion measure, Stepwise multiple regression analysis revealed 4 significant predictors, namely Extraversion, Knowledge of Cognition, Achievement Motivation, and Regulation of Cognition. When College Semester Result was taken as the criterion measure, Knowledge of Cognition was the significant predictor and when the Average Academic Achievement was taken as the criterion variable, Knowledge of Cognition and Achievement Motivation significantly contributed to it.

Extraversion, Knowledge of Cognition, Achievement Motivation and Regulation of Cognition significantly predicted academic achievement index for Group 2 students or those belonging to the Professional Stream courses.

Openness dimension of personality allows students to interact freely with others, intermingle with each other and lead to a fair exchange of ideas and opinions. This helps them to inculcate a broad spectrum of knowledge from various sources and be receptive to newer and richer experiences in life. They can be more accommodating and have sensitivity related to the aesthetic domain, active imagination, more attentiveness to inner feelings, curiosity, preference, and have independence of judgment. People with high

openness to experience usually have a deductive ability, an artistic bent of mind, are broadminded, philosophical and have curiosity (Hossain et al, 2012).

The findings show that in General Stream courses, students usually need to strive harder for academic excellence than in Professional Stream courses. It is generally observed that students need to be resilient, hard-working and competitive to outshine others in the academics and job-related sectors. Dweck, Walton & Cohen, 2014 have talked about 'academic tenacity' or the mindset and skills that allow students to work hard and smart for a long time. These self-regulatory skills of students, their beliefs about themselves, their goals and feelings of social belongingness, are some of the non-cognitive variables that are critical for sustaining the levels of academic success. These also contribute to academic tenacity and academic performance. Research by Dweck, 2015 also indicated about a student's 'mindset', in terms of how they perceive their abilities. This plays a major role in motivation and achievement. It has been seen that students either view intelligence as a fixed amount that they may or may not possess (fixed mindset) or as a malleable quantity that can be increased with learning and effort (growth mindset). This growth mindset related to intelligence helps in increasing tenacity and allows them to survive setbacks.

Hence, students in General Stream courses must be high in Openness and Achievement Motivation to do well academically.

In contrast, students in Professional Stream courses must be high in Extraversion, metacognitive awareness and achievement motivation. In the Indian context, those who take up professional stream courses need to have a broader outlook towards the world. Their outlook and knowledge base must be vast in order to crack tough entrance tests or appear for several job interviews.

Research studies in Psychology corroborate with the present findings. The Extraversion domain scale is strongly correlated with establishing interpersonal connections with others (Wille et al, 2012). On the other hand, metacognitive awareness is also necessary for these students as they face large and diversified curriculum to cover. There is a need for skills of strategy-use like declarative knowledge (factual knowledge), procedural knowledge (strategy implementation) and conditional knowledge (determination under which circumstances to implement the learning procedures) to excel in their academic pursuits. Regulation of cognition is also required by these students which require planning and allocating resources prior to learning, goal setting, comprehension monitoring, debugging strategies or strategies used to correct errors in performance and comprehension, information management strategies,

and the evaluation of strategy effectiveness as well as performance after a learning episode.

Thus, this research points out that in case of General Stream students, Openness and Achievement Motivation are the significant predictors of academic achievement while in case of students from Professional Stream courses, Extraversion, Achievement Motivation and Metacognitive Awareness including Knowledge and Regulation of Cognition, significantly predict their academic achievement.

Conclusion

It has been found out from the present study that Openness and Achievement Motivation had a significant relative contribution on the academic achievement index of students pursuing Under graduation in General Stream courses while Extraversion, Achievement Motivation, Knowledge of Cognition and Regulation of Cognition had a significant relative contribution on the academic achievement index of students pursuing Under graduation in Professional Stream courses. The findings also point out that there are differences between General Stream and Professional Stream students with respect to the variables which significantly predict their academic achievement.

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Received on 21-08-2021

Revised on 11-10-2021

Accepted on 14-10-2021