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Psychological Predictors of College Students Performance

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The purpose of this study was to find how much ability and psychological factors determined academic performance of college students. On a sample of 269 first year undergraduate students, emotional intelligence (Emotional Quotient Inventory; Bar-On,1997) and study motivation (Motivational Strategies for Learning Questionnaire; Pintrich, Smith, Garcia, & McKeachie, 1991) as psychological factors explained variance in GPA by 15% incrementally next to Higher Secondary School Marks, an ability factor, for the students of Humanities (n = 130). Such an increase was around 5% only for the students of Sciences (n = 139). The overall emotional intelligence score and learning motivation score was similar between Science and Humanities students, however, within the Humanities Group only the scores significantly varied among high, medium, and low GPA scoring students. The effect of personality traits namely Extraversion, Openness to Change, and Conscientiousness (NEO Five Factor Inventory; Costa & McCrae, 1992) was least related to academic performance as another psychological factor. Since psychological factors were not as much relevant to the prediction of GPA in the Science Group as in the Humanities that underscored the salience of academic discipline in influencing the students' performance as a contextual factor. Learning motivation varied with GPA more than performance-motivation, meaningfully enough. These findings have implications for educational program by highlighting that psychological factors influence academic achievement next to ability factors differently in specific disciplines.

Keywords: emotional intelligence, academic achievement, learning motivation, personality factors, incremental prediction

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Interest in the relationship between the psychological factors and academic performance persisted among researchers in the last several decades. Educational psychologists have been engaged, in particular, in understanding individual differences in the levels of academic achievement as it bears important implications for learning and education. A number of cognitive and dispositional expectations are set for the graduating students including achieving a high GPA. Researchers have investigated relationship between numerous ability and psychological factors on the one hand and academic performance on the other (Ackermen & Heggestad, 1997). The psychological factors have been found to incrementally predict academic performance over and above academic ability (Barrick & Mount, 1991; Lounsbury, Saudargas, & Gibson, 2004).

Academic performance, as a complex student behavior, underlies several ability factors such as comprehension, memory, previous knowledge as well as low ability psychological factors namely motivation, interests, or personality, to name a few. For instance, interest can influence memory, attention, and information processing leading to academic achievement which in turn boosts self confidence, motivation, and happiness consolidating achievement (Posner & Pattersen, 1990). For instance, studies in nervous system and brain physiology inform us that emotions can help establish goals toward which reasons can work (Ben-Ze'ev, 2000; McPhail, 2004). Emotions are also said to influence academic performance. For instance, emotions and feelings bear on academic achievement as emotions adaptively trigger ideas and thoughts directing our actions towards major pursuits of life. 'Emotional intelligence' i.e., reasoning about emotions as adjunct to 'general intelligence' has been found to improve academic achievement among university students (Lam & Kirby, 2002; Parker, Summerfeldt, Hogan, & Majeski, 2004). However, relationship between academic achievement and emotional intelligence has varied from low (Schulte, Ree, & Carretta, 2004) to high (Newsome, Day, & Catano, 2000; Petrides, Frederickson, & Furnham, 2004). These mixed findings have been attributed to diverse theoretical models of emotional intelligence and different methodological orientations followed in various researches.

A popular notion is that our achievements accrue from motivation. Thus achievement motivation as a psychological factor would potentially account for academic performance in terms of how much students persist in studies. Lounsbury et al. (2004) investigated the construct of 'work drive' in relation to collegiate performance. They found that work drive has incremental validity in predicting course grades and GPA over and above general intelligence. A

number of researchers have employed Achievement Goal Theory (Dweck, 1986) in explaining motivational underpinnings of academic performance. According to Achievement Goal Theory, students entertain two types of motivation i.e., learning and performance motivation. The former is characterized by an intrinsic interest in academics, while the latter is characterized by a desire to demonstrate and register one's competence to others and being concerned about grades for seeking public recognition. Applying Dweck's model of achievement motivation on 267 undergraduate students, Eppler and Harju (1997) found that learning motivation predicted academic success better than performance motivation and relationship between the two was less straightforward but students who were weak on both orientations had clearly the lowest cumulative GPA.

Factors like nature of course or discipline and specific student population can also explain students' performance in certain ways (Pintrich & DeGroot, 1990). Even the casual observer of higher education can not fail to notice differences in the context of learning associated with different subject areas such as science and humanities. According to Ramsden (1977):

> "By far the most pervasive contrasts are between 'arts and science' subjects and between professional and non-professional courses. It appears that lecturers in science departments are more likely to prefer formal and structured approaches to teaching and assessment while teachers endorse more flexible and individualistic methods in arts and social sciences. The science students go about it [course] more logically whereas history students, being temperamental and airy-fairy discuss theories opinion, interpretation and generalization" (p. 208).

A related psychological variable that has been widely researched as predictor of academic performance is personality. A meta-analysis of the Big Five personality dimensions and post-secondary academic achievement showed some consistent results (O'Connor & Paunonen, 2008). Earlier, Barrick, and Mount (1991) reviewing several studies found that Conscientiousness as a personality trait showed consistent relation with performance criteria for many occupational groups and Extraversion and Openness to experience were held as valid traits predicting training proficiency and education. Openness to experience reflects intellectual, cultural, and creative interests of people and has been relevant to emotional intelligence as well (Cannon & Ranzijn, 2005; Schulte et al., 2004). Noftle and Robins (2007) found Conscientiousness as the strongest predictor of GPA across four independent studies and 4 different personality measures. Put together

these findings show incremental prediction for academic outcomes. Conscientious has mostly been interpreted in terms of motivation. More motivated students perform better academically than do less motivated. Though Openness to Change and Extraversion personality factors have shown mixed results in terms of relationship with *academic performance, there is a possibility that these interact with* Consciousness to affect studies in highly competitive college settings including admission in first degree program, especially in sciences.

This study was designed to find if academic performance measured in terms of GPA was influenced by psychological factors such as emotional intelligence, personality traits, and motivation in studies, next to performance in Higher Secondary School Examination (HSSE). It was assumed that individual differences in specific psychological characteristics can be related to scholastic success. A second argument was, whereas ability measured in terms of marks attained in HSSE reflects on how much an individual can do, the psychological characteristics reflect on what an individual will do, as contended by Furnham and Chamorro-Premuzic (2004). Groups of high, middle, and low GPA achievers were compared on psychological factors to estimate their incremental effect in predicting first year college GPA, next to HSSE marks. The second purpose was to find which was a stronger predictive of GPA i.e., performance motive or learning motive.

Hypotheses

1. Marks obtained in Matriculation and Intermediate Exams as the ability factor would explain bulk of the variance in the first year GPA.
2. Emotional intelligence, as a psychological factor, would explain significant incremental variance in the prediction of GPA next to the ability factor, the HSSE.
3. Learning Motivation more than Performance Motivation and personality characteristics of Extraversion, Openness to Change, and Consciousness, as psychological factors, would explain additional variance in the first year GPA significantly.

Method

Sample

Initially, a sample of 291 students (M = 19.15, SD = 1.27 years) of B.A. and B.Sc. (Hons.) program participated in the study during the

middle of the first year of their college in a local public university. Girls comprised 67% of the sample. In B.A. the university time table showed classes in Psychology, Economics, Political Science, and Statistics; for B.Sc. these were Physics, Chemistry, Botany, and Mathematics. Degree served as the sampling units for the study. Sections/Classes in each of these major subjects were selected in a systematic way i.e., one out of every 2 or 3 sections. The selected sections were then approached and students were briefed about this 'personality research project' and were requested to volunteer for participation. Questionnaires were administered next day on those who gave consent for participation. The sampled participants were equivalent of 27% and 28% of the total students in B.Sc. and B.A. programs, respectively. The B.A. students had a mean GPA of 2.58 and *SD* of 0.53. These values were 2.77 and 0.31, respectively, for B.Sc. students.

Instruments

Emotional Intelligence Inventory (EQ-i). Developed by Bar-On (1997), it is a widely self-report measure based on 125 items yields five EQ dimensions scores namely Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood based on 15 subscales namely Self-regard, Emotional Self-awareness, Assertiveness, Independence, Self-actualization, Empathy, Responsibility, Interpersonal Relations, Reality testing, Flexibility, Problem solving, Stress Tolerance, Interpersonal Conflict, Optimism, and Happiness. A total EQ score is also obtained as summation of the 15 subscale scores. Response can be chosen from *Very True of Me* (5) to *Very Untrue of Me* (1). Higher score indicate positive prediction for meeting daily demands and challenges of life, while low EQ scores indicates inability to be effective and possible existence of emotional, social, and behavioral problems.

Participants' mean score on EQ-i was 352.5 (*SD* = 43.6) which is close to a theoretical mean score of 375 showing that the obtained scores were well distributed. Overall, the inventory has an alpha coefficient of .89 on the current data. In North American standardization sample of over 3000 people, an alpha of .97 was reported (Bar-On, 1997). A stability coefficient of .72 for male (n = 73) and .80 for female (n = 279) participants at six months was reported by Bar-On (2004). A moderate correlation with college GPA (r = .213) and a still lower relationship with HSSE Marks (r = .110) in the current study indicates EQ as a nonability or a psychological concept. Using EQ-i on 531 college students in Pakistan, Shumaila

(2009) reported high reliability (α = .91) and relationship between emotional intelligence and GPA more in the case of social sciences (r = .21) than in pure sciences (r = .09).

NEO-Five Factor Inventory (NEO-FFI). Developed by Costa and McCrae (1992), it measures five global dimensions of personality. Three personality factors, namely Extraversion, Openness to Change, and Conscientiousness were used in this study. The scales assess the extent to which participants rate themselves on five point scale, *Strongly Agree* (5) to *Strongly Disagree* (1). Correlation among the dimensions ranged between .24 to .44 indicating them to be related yet different aspects of personality. Women scored higher than men on Openness to Change scale (p < .01). Alpha coefficients values were moderate for Conscientiousness (.65) but relatively less for Extraversion (.39), and Openness to Change (.40) on the current data.

Motivational Strategies for Learning Questionnaire (MSLQ). It is an inventory (Pintrich et al., 1991) measuring motivational Strategies (31 items) namely Learning Motivation (4 items) and Performance Motivation (4 items), Task Value (6 items), and Self-efficacy Beliefs (8 items). As a self-report instrument designed to measure college students' motivational beliefs and use of study strategies, MSLQ is based on a general social-cognitive perspective of motivation where learner is an active processor of information. Respondents answer on a five point scale, *Very True of Me* (5) and *Not at All True of Me* (1). Learning Motivation and Performance Motivation containing were used in this study. Alpha coefficient for the Learning Motivation was .68 and for the Performance Motivation was .71 on the current data.

Higher Secondary School Examination (HSSE). It is a comprehensive examination covering two years' study after Matriculation and the HSSE marks serve the basis for admission to a college or university for the first degree. Marks obtained in HSSE were used in this study, as an ability factor, for predicting first year college GPA.

Grade Point Average (GPA). GPA indicated performance on 9 courses of 3 credit hours each per year in the first year of a first degree program of B.A. and B.Sc. More specifically, GPA denotes performance on a mid term and final term examinations as well as a

semester-work component comprising term paper, quizzes, and assignment. Marks are then curved for relative grading for each course. Relative grades across courses in a year combine to form GPA of a student. For B.A. students, the GPA had a mean of 2.58 and a standard deviation of 0.53 for our study. These values were 2.77 and 0.31, respectively for B.Sc. students. Maximum possible GPA could be 4.00.

Procedure

Data were collected in regular class hours from students who gave consent earlier and volunteered to participate in the testing session. All the questionnaires were administered in order under standard instructions. A Demographic Information Form was also used. Record of HSSE and first year GPA was obtained from the college office.

The participants were approached in different sections/classes during their regular class hours in a span of 16 working days. If the participants inquired about the meanings of a particular word, it was told in simple English; however, such instances were only about a few colloquial American expressions in NEO-FFI. Four participants who made more than 11 omissions were excluded from analysis along with another two for inconsistency index following two decision rules of EQ-i manual. Another 16 cases were dropped from analysis which were found to have been admitted in the college on sports basis in relaxation of academic merit, leaving the sample to 269 respondents for analysis (n = 130 for B.A., n = 139 for B.Sc.).

Results

As curriculum and admission criterion for B.A. (Humanities) and B.Sc. (Sciences) programs were different, therefore, separate analyses were conducted for the two set of data. Initially descriptive statistics was worked out to ascertain goodness of the psychological measures used in the study. This included mean, standard deviation scores as well as reliability and correlation estimates (Table 1). Some of this information is given in the 'Instrument' section. It appears that the psychological measures are functional in the student population in Pakistan with reasonable score dispersion. For testing hypotheses, One-way ANOVA was run to find if attainment of high, medium, and low GPA could be differentiated on the basis of psychological factors i.e., emotional intelligence, motivation, and personality traits. Second,

multiple regression analysis was carried out to estimate incremental variance explained by psychological factors next to ability factor (HSSE marks) in predicting college GPA.

Table 1
Summary of Intercorrelations, Means, and Standard Deviations of the Study Variables

Variables	*M*	*SD*	2	3	4	5	6	7	8	9	10	11	12	13
1. GPA	2.67	.42	.55	.21	.18	.21	.07	.13	.20	.14	.09	.02	.28	.11
2. HSSE	62.5	7.8	--	.10	.08	.16	-.01	.06	.09	.12	.16	.11	.09	.18
3. EQ-i	353	43.6		--	.86	.75	.62	.68	.87	.34	.25	.54	.39	.18
4. Intra	135	16.3			--	.56	.45	.53	.73	.31	.16	.44	.32	.15
5. Inter	111	17.4				--	.19	.36	.61	.22	.25	.38	.34	.25
6. SM	28.2	4.3					--	.55	.53	.22	.22	.40	.22	.02
7. Adapt	28.3	5.3						--	.50	.22	.20	.40	.30	.05
8. GM	63.2	10.8							--	.38	.21	.52	.30	.13
9. Ext	39.4	6.5								--	.28	.43	.07	.03
10. Open	38.6	5.4									--	.36	.16	.05
11. Con	41.8	6.3										--	.35	.02
12. Learn	14.1	2.9											--	.36
13. Perform	19.9	3.5												--

Note. GPA = Grade Point Average; HSSE = Marks in Higher Secondary School Examination; EQ-i = Emotional Intelligence; Intra = Intrapersonal Dimension; Inter = Interpersonal Dimension; SM = Stress Management; Adapt = Adaptation; GM = General Mood; Ext = Extraversion; Open = Openness to Change; Con = Conscientiousness; Learn = Learning Motivation; Perform = Performance Motivation.
Variables 4-8 are EQ dimensions, 9-11 are personality factors and 12-13 are study goals.
Correlation > .12 is significant at .05 level and that >.19 is significant at .01 level.

Relationship of Ability and Psychological Factors with GPA

Results in Table 1 indicate moderate correlation ($r = .55$) is found between HSSE and GPA. This can be taken as validity coefficient for the two ability indices. It indicates that HSSE as the school level academic achievement is related yet different from GPA, the college

level academic attainment. Students who attained high, middle, or low GPA in first year B.A. and B.Sc. program had scored in the same order on their HSSE. Thus HSSE, as an ability factor, can potentially explain variance in GPA score. Motivation as one of the psychological factors is moderately correlated with college GPA but weakly related to high-school or HSSE marks. Second, students display Performance Motivation more than Learning Motivation in their study-approaches (Table 1).

However, the latter is closer (r = .28) to GPA than Performance Motivation (r = .11). This means greater the learning motivation higher the GPA. For instance, students in the high GPA group has significantly more mean score on Learning Motivation than the Middle and the low GPA groups unlike the Performance Motivation on which these groups could not be differentiated in Sciences or in Humanities students (see Table 1). The next salient psychological factor that associated with the GPA is the emotional intelligence (r = .21, p < .01). Separate analyses, however, shows that the latter can be a potential predictor of GPA for the Humanities only (Table 1).

A detailed analysis of emotional intelligence in terms of its subscales show that high GPA students have higher mean score than the Middle and the low GPA groups on seven of the fifteen subscales and two of the five dimensions of EQ-i (Table 3). Just one of the 15 subscales, namely 'Reality Testing' differentiated among the three GPA groups in the Sciences. Secondly, emotional intelligence is aligned with Learning Motivation more than Performance Motivation in (r =.39 & .18, respectively).

The personality traits of Extraversion, Openness to Change, and Conscientiousness are weakly associated with GPA (r = .09-.20) and that too for the Humanities group only (see Table 1). Further, these traits are overlapping with emotional intelligence (r = .25-.54) showing common variance between 6-29% (squared correlation multiplied with 100). As such these traits would have little power to predict GPA when entered in multiple regression equation, after emotional intelligence, as planned.

Psychological Profile of High, Middle, and Low Academic Achievers

GPA is popularly interpreted as high, average, or low. In the present study, these three categories keep 27, 50, and 23 percent of the students with GPA of > 3.00, 3.00 - 2.51 and < 2.51, respectively. The high, middle and low GPA grouping is followed to present psychological profiles of the students in Tables 2 and 3.

Table 2

One Way Analysis of Variance of Ability and Psychological Factors for Students of High, Middle, and Low GPA Levels

	GPA					
	High (n = 73)	Middle (n = 134)	Low (n = 62)			Post-hoc
Variables	*M(SD)*	*M(SD)*	*M(SD)*	*F*	*p*	Difference
		Ability Factors				
Matric	78.1(5.4)	74.8(5.5)	74.1(6.1)	5.1	.007	1 > 2 >3
	75.8(5.4)	67.0(9.7)	64.3(7.8)	22.6	.000	1 > 2, 3
HSSE	75.1(4.5)	71.5(5.0)	67.7(5.4)	14.6	.000	1 > 2 > 3
	74.2(5.3)	68.3(5.0)	64.2(6.5)	31.6	.000	1 > 2 > 3
		Psychological Factors				
EQ-i	391.8(52.9)	392.9(45.9)	379.8(47.7)	0.7	.481	ns
	409.7(37.4)	398.0(41.5)	380.9(33.0)	6.7	.002	1> 2 > 3
Ext	39.5(7.8)	40.0(8.0)	38.0(4.5)	0.6	.548	ns
	42.0(3.8)	38.5(5.3)	38.0(5.3)	7.2	.001	1 > 2, 3
Open	38.6(7.0)	38.1(5.7)	40.1(4.3)	.96	.384	ns
	40.7(4.9)	38.5(4.7)	37.9(4.6)	3.9	.023	1 > 2,3
Con	42.0(8.3)	42.2(5.6)	39.1(6.6)	1.9	.158	ns
	44.3(5.9)	42.2(6.1)	40.3(5.6)	4.9	.009	1 > 3
Learn	15.1(3.1)	13.3(2.6)	12.7(2.2)	4.7	.011	1 > 2, 3
	16.8(2.3)	14.4(2.6)	13.6(2.9)	8.4	.001	1 > 2, 3
Perform	21.7(2.7)	20.3(3.3)	19.7(3.2)	1.9	.152	ns
	19.6(3.2)	19.1(4.2)	19.2(3.8)	0.1	.903	ns

Between group df = 2; within groups df = 266; groups total df = 268

Note. Matric = Marks in 10th grade; HSSE = Marks in Higher Secondary School Examination; EQ-i = Emotional Intelligence; Ext = Extraversion; Open = Openness to Change; Con = Conscientiousness; Learn = Learning Motivation; Perform = Performance Motivation. ns = not statistically significant.

Ability Factors. The high GPA college group has achieved significantly higher percentage of marks in Matric and HSSE compared to the middle GPA group. The middle GPA group is similarly higher than the low GPA group. These scholastic indices are weakly related with the psychological factors (r = .01 - .28) as distinct concepts.

Psychological Factors. Students display more performance motivation than learning motivation and learning motivation of the high, middle, and low GPA groups can be clearly differentiated.

Table 3

One Way Analysis of Variance of EQ-i Dimensions and Subscales for Students of High, Middle, and Low GPA Levels

	GPA					
	High	Middle	Low			Post-hoc
Variables	*M(SD)*	*M(SD)*	*M(SD)*	*F*	*p*	Difference
			Humanities[a]			
ESA	27.5(4.0)	26.5(5.2)	24.8(4.8)	3.7	.027	1 > 3
Ass	24.2(3.3)	22.6(5.0)	21.7(4.8)	3.3	.039	1 > 3
SA	34.6(5.0)	34.4(4.7)	31.9(4.7)	4.7	.011	1, 2 > 3
IR	44.3(4.7)	42.2(6.9)	39.8(6.7)	5.3	.006	1 > 3
ST	31.8(5.6)	30.0(6.7)	28.6(5.8)	3.0	.540	1 > 3
Opt	30.9(5.4)	30.1(5.6)	27.6(5.3)	4.7	.011	1, 2 > 3
Hap	36.7(4.5)	35.1(5.6)	32.9(6.4)	3.9	.040	1 > 3
Intra	138.8(17.6)	136.8(16.0)	136.7(14.8)	4.8	.009	1, 2 > 3
Inter	114.8(16.3)	111.4(17.6)	107.6(17.7)	3.2	.044	1, 2 > 3
			Sciences[b]			
Reality Testing	31.5(3.5)	32.0(4.4)	29.0(5.6)	3.68	.028	1, 2 > 3

Note. ESA = Emotional Self- Awareness; Ass = Assertiveness; SA = Self-Actualization; IR = Interpersonal Relation; ST = Stress Tolerance; Opt = Optimism; Hap = Happiness; Intra = Intrapersonal Dimension; Inter = Interpersonal; Dimension. Only significant (p = .05) results are reported; [a] n =130; [b] n =139; df = (2, 127 for Humanities; 2, 136 for Science)

Emotional intelligence scores differentiate among humanities students more than those in sciences indicating relevance of emotional intelligence in academic discipline. More specifically, high GPA students more than the middle and low GPA groups score significantly different on interpersonal and intrapersonal dimensions of emotional intelligence encompassing seven of the 15 factor scales in the humanities students unlike their science counterparts where the difference is significant one just one subscale Reality Testing.

Predictors of Academic Performance

In the next phase of analysis, ability and psychological predictors were regressed on GPA in hierarchical regression analysis. HSSE marks were entered in the first step followed by EQ in the second, leaning and performance motivation in the third and personality traits in the fourth step. A series of regression equations were run for science and humanities students, separately for predicting GPA (Table 4).

Table 4

Hierarchical Multiple Regression Analysis Predicting GPA from Ability and Psychological Factors

	Science[a]				Humanities[b]			
Predictors	M-1	M-2	M-3	M-4	M-1	M-2	M-3	M-4
Step-1								
HSSE Marks	.48	.49	.43	.43	.52	.48	.45	.51
Step-2								
EQ		.11	.03	.05		.29	.22	.33
Step-3								
Learning Motivation			.21	.19			.29	.31
Performance Motivation			.05	.05			-.23	-.25
Step-4								
Extraversion				.00				-.03
Openness				-.08				-.15
Conscientiousness				.02				-.12
R^2	.23	.24	.28	.30	.27	.35	.42	.45
ΔR^2	-	.01	.04	.01	-	.08	.07	.03

Note. M = Model, Models 1-4 of regressions express β values. EQ = Emotional Quotient. β values < .26 are significant at .05 level, between .26 to .40 are significant at .01 level, and β values >.40 are significant at .001 level. [a] $n = 139$, [b] $n = 130$.

HSSE marks moderately predicted GPA for sciences β = .48 and humanities β = .52 (columns M1). Emotional intelligence or EQ as the next predictor showed significant incremental validity for the humanities $\Delta R^2 = .08$, $p < .05$ (in columns M2) but not for sciences $\Delta R^2 = .01$. Learning motivation predicted GPA significantly both for humanities $\Delta R^2 = .07$, $p < .05$ as well as for sciences $\Delta R^2 = .04$, $p < .05$ (in column M3). Performance motivation was relevant as predictor of GPA for humanities group, not for sciences. Lastly, personality traits were predictive of students' performance neither in sciences nor in humanities (Columns M 4). On the whole, 23% of

variance in GPA was explained by HSSE marks alone for the science students. EQ and Learning motivation together added about 5% to the prediction. In humanities, the prediction was 27% by HSSE marks and another 15% by Emotional intelligence and Learning motivation together. The psychological factors therefore had incremental validity for predicting GPA but more in the humanities than in sciences.

Discussion

The hypothesis that high school marks, an ability factor, would explain a large portion of variance in predicting GPA followed by psychological factors especially emotional intelligence was supported. The school marks, as an ability factor predicted students' GPA about equally well both in humanities and science students but psychological factors especially emotional intelligence enhanced prediction by tapping additional variance only in the humanities. This showed that emotional intelligence is closer to instructions in humanities. Obviously, humanities deal with knowledge about human behavior, social, and emotional relations etc. whereas sciences deal in matter. This is reflected in Table 3 as well where high GPA students obtained significantly higher scores on several emotional EQ-i scales in the humanities group compared to just one in the sciences. It appears that scholastic and emotional faculties of mind are related. EQ skills, like other psychological processes, seem to develop as a byproduct of educational experiences.

Mayer, Caruso, and Salovey (2000) contended that emotions and intelligence should connect each other in "a low-to-moderate correlation" (p. 6). It corresponded with the results of this study as well. The results, moreover, underscore the importance of disciplinary context or nature of academic program as well in predicting academic performance via psychological factors. Petrides et al. (2004) for example, found that emotional intelligence had no influence on mathematics and science performance, but it moderated the effect of IQ on English and overall General Certificate of Secondary Education (GCSE) in UK. Some other studies have, however, shown poor relationship (Parker, Creque, Barnhart et al., 2004; Sutarso, Baggett, Sutarso, & Tapia, 1996). Future investigations need to address specific curricular effects on psychological factors.

It was observed in students' performance on self-report MSLQ that they tended to endorse performance motive more than learning motive consistent with several other researches (Dweck, 1986; Eppler & Harju 1977; Urdan, 1977) however, actually it is learning or

intrinsic motivation that is more predictive of their college GPA. It means that college education is more attuned to learning motive and those who have such motive would benefit from college education by scoring higher GPA. Fostering learning motive in students, therefore, seems a promising strategy for educators to maximize learning at college level. More professional education focused on selected academic area of knowledge in college education could also be responsible for this transition on its own. Age and maturity of the students could also be contributory factors in this transition. These results answer one of the purposes of this study. A host of other studies provide evidence for the validity of Achievement Motivation Theory which focuses on how motivational processes affect learning (Archer, 1944; Rebbeca, 2005). In fact bulk of the explanation, on account of psychological factors, is explained by the learning motive. The strength of GPA varied with learning motivation linearly.

The ability factor and learning motivation seem to move in tandem accounting for students' college performance. The emotional intelligence factor that covaries with education and learning particularly in humanities sector scaffolds this trajectory of predictors of college education. The personality factors could not contribute to the prediction because of their weak association with GPA and also because these traits overlapped with emotional intelligence that had already significantly added to the prediction in Model-2, particularly in the humanities leaving the personality traits redundant in the given prediction model.

Implications of the study

An important implication of the study is that nature (science-humanities) and level of education (school-college) promotes different behavioral characteristics in students. Developing an understanding of what behavioral characteristic and skills related to achievement in specific area of knowledge is critical to educationists as well as the society at large in shaping human behavior. For instance, building learning motivation among students can help students do well in college studies. Instructions in humanities seem to build emotional intelligence in particular.

Limitations and Suggestions

This study involves self-report only as a measure of psychological factors which have a built-in problem of 'common

method variance'. This can be circumvented in future research by following multi-method strategy. Second, this study involves college students. College GPA traditionally moves in a narrow range because admission in college is very competitive and a homogeneous group of students get selected. The narrow range college GPA constrains correlational estimates. We can expect higher co-relational results, on a normalized sample such as in schools where students of all ability levels study together without strict admission requirements. This constraints needs to be kept in view while evaluating the results of this study. This leads to the third point or suggestion that future studies may recruit both high school and college students so that nature (Science-Humanities) and level of studies (school-college) could be studied together to trace transition in motivational trends from school to college education and curricular effect.

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