© Journal of the Indian Academy of Applied Psychology
July 2013, Vol.39, No.2, 266-273.

Sociability and Academic Achievement as Predictors of Creativity Level among University Students

Saba Ghayas and Farah Malik
University of Sargodha, Pakistan, GCU Lahore, Pakistan

The present study investigated the sociability and academic achievement as predictors of creativity among university students. The sample consisted of 300 undergraduate students (155 girls and145 boys) taken from pure sciences and arts and social sciences departments of BS Hons. classes. The age range of the sample was 18 to 24 years. Abedi Creativity Test and the translated version of California Psychological Inventory were used to measure creativity, and sociability respectively. Cumulative grade point averages (CGPA) of previous semesters (III and V) were taken as an index of academic achievement. Analysis revealed that sociability and academic achievement is significantly related with the creativity but academic achievement is not significantly related with the sociability of students. Furthermore, the results demonstrated that sociability and academic achievement are significant predictors of level of creativity. The results revealed that academic achievement of girls was higher than that of boys. The analysis demonstrated that students of arts and social sciences were significantly more sociable as compared to the students of pure sciences. The results of the current study are discussed in relevance to the cultural context.

Keywords: Creativity Level, Sociability, Academic Achievement

Creativity is viewed as a trait of an individual and secondly, a process through which problems can be solved and new ideas can be generated. Furthermore, there are mainly three characteristics of any creative individual. First characteristic is related with the cognitive abilities such as divergent thinking which has been considered as a part of creativity (Runco, 1996). Second characteristic is family background which influences the creativity of any individual in positive or negative way. Third characteristic or factor of creativity is the personality traits which usually determine and predict the creativity of individuals. Different traits such as flexibility, freedom of thought, independent mindedness, willingness to take risks, and tolerance of ambiguities have been considered as related to creativity (Ginsberg & Throsby, 2006). Creativity and different factors influencing it are of vital importance in the current scenario, especially in educational settings. The current study is aimed at finding out the predictability of creativity on the basis of sociability and academic achievement of university students.

Sanson, Hemphill, and Smart (2004) describe sociability as "the tendency to approach novel situations and people" (p.143). Sociable behavior is significant for the development of social dealings in childhood. The development of social relationships is very imperative because it is linked to a range of outcomes later in life. Pianta (1999) posed the significance of developing positive peer relationships. Positive social behavior links with success in school and life. Although not the only influential variable, positive sociable behaviors are highly imperative to positive social relationships. The perceived creativity of individuals has been studied with the sociability leadership and results revealed that sociability leadership is a good predictor of perceived creativity (Lau, Li, & Chu, 2004).

Another study was conducted by Wolfradt and Pretz (2001) to investigate the relationship between creativity and personality among college students from a variety of major fields of study. The results showed a positive relationship between openness to experience and creativity. Moreover,

high scores on intuition and extraversion were the best predictors for creativity as measured by the Creative Personality Scale.

The creativity level of students has also been explored with relevance to their academic achievement and previous research revealed that creativity appears to be differentially related with the academic achievement of students (Marjoribanks, 1976). According to Karimi (2000), there is relationship between total creativity and academic achievement. Different researches (Hirsh & Peterson, 2008; Struthers, Menec, Schonwetter, & Perry, 1996) also suggested that academic achievement can be predicted through creativity testing. .

On the other hand, Komarraju, Karau, and Schmeck, (2008) conducted a research on academic achievement of young students, and provided no reliable and consistent indication concerning the extent of creativity, age, and gender on academic achievement. Nori (2002) also studied the relationship between creativity and academic achievement among high school of students in Shiraz city. She used the Abedi questionnaire for creativity and CGPA for academic achievement. The results revealed that there was no significant relationship between creativity and academic achievement. Naderi, Abdullah, Aizan, Sharir, and Kumar (2009) also revealed that creativity, age and gender are low predictors of academic achievement

In general, it has been found that children who achieve high success in their academic areas also display sociable behavior (Masten et al., 1995). On the other hand, those who are disruptive and aggressive in nature show low grades in their educational career (Dishion, 1990). It has been found that social withdrawal and inhibition are also associated with academic difficulties among North American children and academic achievement of socially inhibited and shy children is poor in school than their less inhibited counterparts. Futhermore, it is said that children who are socially accepted and liked by peers are likely to be high achievers in the school as compared to the children who are rejected (Wentzel & Asher, 1995).

It was reported that there is a link between social and relational performance and academic achievement. They argued that academic achievement influences social behaviors and adjustment. According to them, academic difficulties may lead to frustration, which in turn contributes to deviant social behaviors. In addition, academic achievement may determine social regard in the peer group and consequently affect self-image. Children who do poorly in school may experience difficulties in obtaining positive status and respect among peers and develop negative self-perceptions of self-worth; consequently, these children may display socio-emotional problems and eventually turn to deviant peers for support (McGee, Williams, Share, Anderson, & Silva, 1986); children with academic difficulties tend to develop maladaptive and disruptive social behaviors and their aggressive behavior tend to reject them by their peers and adults (Maughan, Gray, & Rutter, 1985). It was also observed that children who improve themselves academically with the treatment become more competent in their social interactions and have fewer socio emotional difficulties than those who do not receive treatment (Coie & Krehbiel, 1984; Kellam, Brown, Rubin, & Ensminger, 1983). Furthermore, in Pakistan, Malik and Malik (2007) conducted research on 200 first year college students. Regression analysis revealed that sociability is not linked with the academic achievement and emotional intelligence of the students.

Gender differences have already been studied in relation to sociability. Sanchez-Ruiz, Perez-Gonzalez, and Petrides (2010) revealed non-significant gender differences in the sociability level of students. A meta-analysis was conducted in order to explore gender effects on trait attributions from 18 studies. Result revealed that female targets were seen as more sociable than male targets (Feingold, 1998).

Gender differences in creative achievement vary considerably from field to field. In writing, musical performance, dance, and drama, the creative achievements of women are more on par with those of men than in such fields as science, musical composition, or painting. This imbalance led Vernon (1989) to argue that social-environmental influences could not be the only causes of different patterns of creative

achievement by men and women and that genetic factor must also play a role. Another study was conducted by Sang (1991) on Malaysian people in order to find out gender differences in creativity. The findings indicated that the boys were more creative than girls in both figural creativity and verbal creativity as well as in each of the seven creativity components. Ikram and Ghayas (2007) also examined gender differences in creativity level of school children. Analysis of data indicated significant differences in creativity level of students. Independent sample t-test revealed that girls were more creative as compared to the boys. Another study conducted in Pakistan explored gender differences in creativity and the results showed significant gender differences in creativity level of students furthermore it was evident that girls were more creative as compared to the boys (Shakeel, 2011). On the basis of the above review, the following objectives were formulated:

Objectives:

1. To predict the creativity level on the basis of sociability and academic achievement.

2. To find out the relationship between academic achievement and sociability level.

3. To find out gender differences in level of sociability, and creativity level.

Hypotheses:

1. Sociability and academic achievement would be significant predictors of creativity level of undergraduate students.

2. There would be positive correlation between sociability and academic achievement of undergraduate students.

3. Level of sociability would be higher among girls as compared to the sociability level of boys.

4. Level of creativity would be higher among girls as compared to the creativity level of boys.

Method

Sample:

It consists of 300 (boys 145 and girls 155) undergraduate students of arts and science from the Government College, University of Lahore. Social sciences (*n* =150) and pure sciences (*n* =150). Equal number of students was taken from fourth and sixth semesters of all departments. All the participants were taking from regular classes and students from self support classes were not taken as participant of the study. The age range was 18 to 24 with *M*=20.4, *SD*=1.05.

Measures:

Abedi Creativity Test (Abedi, 1994): It was used in order to measure the creativity level of students. It is a self report inventory which is consisted of 56 multiple choice items and each item is consisted of three options and responses pattern is three point scale. It has four subscales—elaboration scale (10), flexibility scale (13), fluency scale (16) and originality scale (16). The maximum score for the total scale and four subscales (elaboration, flexibility, fluency and originality) are 168, 30, 39, 58 and 58 respectively. The possible range of the scores on Abedi Creativity test is 56 to 168 and higher the score higher will be creativity level. In a previous study internal consistency for CT were obtained using Cronbach's alpha; ranged from 0.61 to 0.75 (Khamse, 2006).

Sociability Subscale of CPI (Ahmad, 1986): Sociability of the participants will be determined by the adapted and Urdu translated version of California Psychological inventory's (CPI) subscale Sociability (Ahmad, 1986). It is consisted of dichotomous thirty two items. Six items (item no 3, 7, 8, 13, 14, 15) are reversely scored and maximum score on sociability subscale is 64 and lowest is zero. Ahmad (1986) has worked on reliability and validity of the translated version of CPI subscales and revealed that internal consistency of sociability subscale of California psychological inventory ranged from .66 to .78 on Pakistani Population. In a study conducted by Jahangir (2006) KR-20 reliability indices were calculated for the subscales of CPI and obtained range of reliability was from .72 to .97 with a median value of .89 for the total sample of 695 participants.

Academic Achievement: For the purpose of the study, Cumulative Grade Point Average (CGPA) was used as a proxy of academic achievement of the students. As the sample of the study was taken from fourth and sixth semesters so their CGPA of third and fifth semesters were

the index of academic achievement respectively. CGPA of the students were the total number of grade points earned by the total number of credit hours attempted till the previous semester. The maximum grade point is 4.

Procedure

In order to collect the data, first of all, formal departmental permission was obtained through the head of departments. Departmental heads identified one class from fourth and one from sixth semester, and through teachers' help, the students were contacted in their class rooms. Students were briefed regarding the nature and objectives of the study. The informed consent of the students was taken. Before administering the instruments of the study, the required personal information was obtained through the demographical sheet and the confidentiality of their information was ensured. The participants of study were apprised for their cooperation and support in the study. In the demographic form, CGPA of the students were asked but after collecting the data from students of fourth and sixth semesters, CGPAs of their third and fifth semesters was taken from the controller of examination in order to cross check it with the reported CGPA of the students. Cross checking of reported CGPA and original CGPA taken from the controller examination it appeared that a lot of students reported their wrong CGPA in the demographic form.

Results

Table 1. Mean and SD of Girls (n=155) and Boys (n=145) on Creativity, Sociability, and Academic Achievement

	Girls(*n* =155)		Boys(*n* =145)	
	M	*SD*	*M*	*SD*
Creativity	124.1	16.2	122.6	15.9
Sociability	18.3	4.46	18.9	4.40
CGPA	3.03	.30	2.88	.36

Table 1 indicates the mean and standard deviation of boys and girls' score on creativity, sociability and academic achievement.

Table 2. Inter Correlations among Sociability, Academic Achievement and Creativity Level (N=300)

	Variables	2	3
1	Creativity	.36***	.12*
2	Sociability	-	-.09
3	CGPA -	-	

*p < .05. ***p < .001.

Table 2 indicates that the correlation between creativity and sociability (r=.36, p< .001), creativity and academic achievement (r= .12, p<.05) were found significant. Results of correlation analysis are giving an initial picture of relationship between variables of study. It reflects the acceptance of first hypothesis. Wheras analysis has revealed non significant correlations of sociability with academic achievement (r = -.09) and on the basis of these results second hypothesis of study is rejected.

Regression analysis was conducted by using the entry method. Table 3 indicates that sociability also emerged as significant model, F (1, 299) = 42.84, p < .001, has a (β=.36, t = 6.54, p <.001) which explained 35% of the variance. Academic achievement emerged as significant predictor for creativity, F (1, 299) =3.99, p < .05, has a (β=.12, t = 2.00, p < .05) which explained 12 percent of variance. Results are in support of first hypothesis of study. Table 4 indicates that there are non-significant gender differences in sociability and creativity level of students. Results of t-test rejected the third and fourth hypothesis of study.

Discussion

The present study aimed at finding out the predictability of the level of creativity on the basis

Table 3. Simple Regression Analysis for Predictor Variables of Creativity (N = 300)

Predictor Variables	*B*	*SE*	β	*R*	R^2	*t*
Constant	1.29	.20				
Sociability			.36	.36	.13	6.54***
Constant	5.47	2.74				
CGPA			.12	.12	.01	2.00*

*p<.05. ***p<.001.

Table 4. Significance of difference between Mean Scores of Girls (n=155) and Boys (n=145) on Sociability and Creativity level

	Girls(*n* = 155)	Boys(*n* = 145)			95% CI	
	M(SD)	*M(SD)*	*t*	*Cohen's d*	*LL*	*UP*
Sociability	18.3(4.46)	18.9(4.40)	1.18	0.13	-.39	.16
Creativity	124.1(16.2)	122.6(15.9)	.83	0.12	-.52	2.11

p=n.s

of sociability level and academic achievement. Another aim of the study was to find out gender differences in sociability and creativity level. Primarily, it was hypothesized that sociability and academic achievement would be the significant predictors of creativity level of students. Results indicate that creativity is significantly correlated with sociability and academic achievement wheras analysis has revealed non-significant correlations of sociability with academic achievement (See Table 2). Analysis has supported the primary hypothesis as it has revealed that sociability and academic achievement of students are significant predictors of creativity level (See Table 3). Results of the present study are in consistent with the previous study. Researchers were interested in creativity and sociability of college students and results revealed that creativity is associated with everyday experiences and social interactions (Pachucki, Mark, Lena, Jennifer, Tepper, & Steven, 2010). It indicates that sociability contributes to the creativity level of individuals.

In context with our culture, a sociable person always try to develop relationships with individuals and in order to maintain these relations an individual must have to deal differently with different type of people. Dealing and tackling with a variety of successful individuals may crop up and encourage creativity in individuals. It may be said that in order to successfully run relationships with individuals of different moods, temperaments, and attitude, a person needs creativity.

The results of the study have indicated that academic achievement is also a significant predictor of creativity level and these results are in consistent with the already existing researches. A study was conducted by Mahmodi (1998) on personality features, creativity, and academic achievement. The result showed a significant relationship between creativity and academic achievement.

Results of another study were also in support of our finding which was conducted by Ai (1999) on the relationship between creativity and academic achievement of students. Three creativity tests were used to measure the creativity level of the students. Results revealed that creativity was related with the academic achievement of students. Academic achievement and creativity are linked with cognitive abilities. The CGPA of any student mostly represents his or her abilities and hence, the relationship between creativity and academic achievement may be established.

Analysis of data has rejected the second hypothesis of the study as results have revealed that there is no significant relationship between the academic achievement and sociability of the students (See Table 2). A recently conducted research in Pakistan has revealed the results which are in consistent with the present findings. Research conducted by Fatima, Ghayas and Adil (2012) showed that sociability and academic achievement are not related to each other.

Similar results have been found by a research conducted by Chamorro-Premuzic and Furnham, (2003) and they found that extraversion was not related to exam performance and was unrelated to academic achievement. Sociability is a vital characteristic of extraversion so it supports the results of present research.

Analysis of data has also rejected the third hypothesis of the study as the results have revealed that there are no gender differences in sociability level of the students while it was hypothesized that the level of sociability would be higher among girls as compared to the boys. Results of the present study are contrary to many already existing researches which proved gender differences in sociability. The results of the study

can be justified by the point of view of Maccoby (1998). According to him there are no gender differences in the sociability level of girls and boys.

Analysis of data has rejected the fourth hypothesis of the study as results have revealed that there are no gender differences in creativity level of the students while it was hypothesized that level of creativity would be higher among girls as compared to the boys. Results of the present study are partially in consistent with a previous study conducted by Matud, Rodriguez and Grande (2007) on 466 women and 273 men of Canary Islands. Their study revealed minimal gender differences in creative thinking and they found the interactive effect of education and gender on the creative thinking of individuals.

Results of a few studies are in support of current results as they revealed no gender differences in creativity, and those that have found differences have not found any consistent pattern of differences (Baer & Kaufman, 2006; Kogan, 1974). Differences in creativity among girls and boys depend upon the field. Girls perform more creatively in writing, musical performance, dance, and drama, while on the other hand, men are more creative in science, musical composition, or painting (Bear, 2005). So it indicates that girls and boys both are creative but their creativity varies in different domains

It can be concluded that the level of sociability and academic achievement were the significant predictors of creativity among university undergraduates.. Academic achievement appeared to be irrelevant in determining the sociability. Another important conclusion is that gender did not play an important role in determining creativity and sociability level of students.

Limitations and Recommendations

In the present study, socioeconomic status of the students was not controlled which might have contributed in creativity, sociability, and academic achievement of students. Self reported tools have been used in the current study. In order to get more externally valid results, researchers can replicate the present study on a larger and more diverse sample. More than one university of different cities can be taken to get more information and a wider idea. Longitudinal study can be fruitful to know the change in creativity, humor, and sociability with the passage of time. Effect of change in educational level can be seen on the variables of the study. Performance tools can be used to get a better idea about the creativity and humor level of individuals. Future research can be conducted on some other samples like delinquents, handicapped, and orphans and also on elderly people.

Implications of the study

The findings of this study may be beneficial for educational psychologists, counselors, school psychologists, cognitive psychologists, teachers, parents, administrators, and policy makers to keep these findings under consideration while taking some steps or planning ahead. These findings can help teachers to develop some strategies in order to encourage and facilitate the creativity of individuals. It can help administrators to develop some plans for devising a creative environment. Furthermore, the Government should specify some funds in order to boost up the creativity level of individuals in different settings. The findings of this research will further extend the scope of research, previously conducted in the developed countries, to the developing countries such as Pakistan, relating sense of humor, sociability, and academic achievement as predicting variables of creativity. This study also highlights the role of parents and teachers in the development of creativity of individuals. With relationship of creativity and academic achievement, it reflects that creativity also helps in excelling the educational field. So, if we need good scores and academic achievement, then creativity and sociability of students must be encouraged.

References

Abedi, J. (1994). A latent variable modeling approach to assessing reliability and validity of a creativity instrument. *Creativity Research Journal*, 14(1), 267-277.

Ahmad, I. (1986). *Development of Urdu version of California Psychological Inventory (CPI) in Pakistan*. National institute of Psychology, Quaid-e-Azam University, Islamabad, Pakistan

Ai, X. (1999). Creativity and Academic Achievement: an investigation of gender differences. *Creativity*

Research Journal, *12,* 30–35. Retrieved from http://www.americanscience.org/journals/am-sci/am0601/241104Relationshipam06 01.pdf

Bear, J. (2005). Gender and Creativity. Paper presented at the annual meeting of the American Psychological Association, Washington, DC.

Bear, J., & Kaufman, J. C. (2006). *Gender Differences in Creativity.* Retrieved from http://www-usr.rider.edu/~baer/BaerKaufmanGenderDifferences. pdf

Chamorro-Premuzic, T., & Furnham, A. (2003). Personality traits and academic exam performance. *European Journal of Personality, 17,* 237**–**250. Retrieved http:// onlinelibrary.wiley.com/doi/10.1002/per.473/abstract

Coie, J. D., & Krehbiel, G. (1984). Effects of academic tutoring on the social status of low-achieving, socially rejected children. *Child Development, 55,* 1465**–**1478. Retrieved from http://www.stanford.edu/~jelenao/pdf/Obradovic%20et%20al.%20(2010)%20Dual%20Cascade.pdf

Dishion, T.J. (1990). The family ecology of boys' peer relations in middle childhood. *Child Development, 61,* 874–892.

Fatima, I., Ghayas, S., & Adil, A. (2012). *Achievement goals and sociability as the predictors of academic achievement among university undergraduates.* Unpublished Master's Dissertation. University of Sargodha, Sargodha.

Feingold, A. (1998). Gender stereotyping for sociability, dominance, character, and mental health: A meta-analysis of findings from the bogus stranger paradigm. *Genetic, Social, & General Psychology Monographs, 124* (3), 253**–**270.

Ginsburgh, V. A., & Throsby, D. (Eds). (2006). *Handbook of the Economics of art and culture* (Vol. 1). North Holland.

Hirsh, J. B., & Peterson, J. B. (2008). Predicting creativity and academic success with a "Fake-Proof" measure of the Big Five. *Journal of Research in Personality, 4*2 (5), 1323–1333. Retrieved from http://www.americanscience.org/journals/am-sci/0505/130927_American_Science_am0505.pdf

Ikram, F., & Ghayas, S. (2007). *Effect of Birth order on Creativity Level of Students* Unpublished Masters Dissertation. Department of Psychology, University of Sargodha.

Jahangir, F. (2006). Psycho-social personality features among N.W.F.P. male population Pakistan. *Journal of Professional Psychology: Research and Practice, 1*(1),19-24.

Karimi, A. (2000). *The relationship between anxiety, creativity, gender, academic achievement and Social prestige among secondary school.* University of Shiraz, Shiraz. Retrieved June 06, 2010, from http://www.americanscience.org/journals/am-sci/0505/130927_American_Science_am0505.pdf

Kellam, S. G., Brown, C. H., Rubin, B. R., & Ensminger, M. E. (1983). Paths leading to teenage psychiatric symptoms and substance use: Developmental epidemiological studies in Woodlawn. In S. B. Guze, E J. Earls, & J. E. Barrett (Eds.), *Childhood psychopathology and development* (pp. 17–51). New York: Raven Press.

Khamse, A. (2006). Creative Processes in Female and Male College Students. *Women's Studies, 3*(3), 51–69.creativity. Manuscript submitted for publication. Retrieved November 10, 2007, from http://www-usr.rider.edu/ *f*baer/Baer-APA-05.doc.

Kogan, N. (1974). Creativity and sex differences. *Journal of Creative Behavio*r, *8* (1), 1-14. Retrieved, from http://jaie.asu.edu/v40/V40I1A3.pdf

Komarraju, M., Karau, S. J., & Schmeck, R. R. (2008). Role of the Big Five personality traits in predicting college students' academic motivation and achievement. *Learning and Individual Differences, In Press, Corrected Proo*f.

Lau, S., Li, S.C., & Chu, D., (2004). Perceived Creativity: Its Relationship to Social Status and Self-Concept Among Chinese High Ability Children. *Creativity Research Journal*, *16*(1), 59–67.

Macobby, E. E. (1998). The two sexes: Growing up apart, coming together. Cambridge, MA: Harvard University Press.

Mahmodi, M. T. (1998). *The relationship between Employment's Mother , Personality, Creativity and academic achievement among students in high school.* University of educational' tether, Tehran. Retrieved, from http://www.americanscience.org/journals/am-sci/0505/13_0927_American_Science_am0505.pdf

Malik, T., & Malik, F. (2007). *Relationship of emotional intelligence with academic achievement and social competence in high and low achievers*. Unpublished M. Phill Dissertation. Department of Psychology, Government College Universaity, Lahore.

Marjoribanks, K. (1976). Academic Achievement, Intelligence, and Creativity: A Regression Surface

Analysis. *Multivariate Behavioral Research, 11(1),* 105–118.

Masten, A., Coatsworth, J. D., Neemann, J., Gest, S. D., Tellegen, A., & Garmezy, N. (1995). The structure and coherence of competence from childhood through adolescence. Child Development, 66, 1635–1659.

Matud, M. P., Rodríguez, C., & Grande, J. (2007). Gender differences in creative thinking. *Personality and Individual Differences, 43*(5), 1137–1147.

Maughan, B., Gray, G., & Rutter, M. (1985). Reading retardation and antisocial behavior: A follow: up into employment. *Journal of Child Psychology and Psychiatry, 26,* 741**–**758.

McGee, R., Williams, S., Share, D. L., Anderson, J., & Silva, P. A. (1986). The relationship between specific reading retardation, general reading backwardness, and behavioural problems in a large sample of Dunedin boys: A longitudinal study from five to eleven years. *Journal of Child Psychology and Psychiatry, 27,* 597–610.

Naderi, H., Abdullah, R., Aizan, H. T., Sharir, J., & Kumar, V. (2009). Creativity, Age and Gender as Predictors of Academic Achievement among Undergraduate Students. *Journal of American Science, 5*(5), 101–112.

Nori, Z. (2002). *Gender differences creativity, academic achievement (mathematics, sciences and language of literature) among high school in City of Shiraz, Iran.* University of Shiraz, Shiraz. Retrieved from Rhttp://www.americanscience. org/journals/am-sci/0505/13_0927_American_ Scienc e_am0505.pdf

Pachucki., Mark, A., Lena., Jennifer, C., Tepper., & Steven, J. (2010). Creativity narratives among college students: sociability and everyday creativity. *The Sociological Quarterly, 51* (1), 122–149.

Pianta, R. C. (1999). *Enhancing relationships between children and teachers.* Washington, DC: American Psychological Association.

Runco, M. A. (1996). Personal creativity. In creativity from childhood through adulthood. In M. A. Runco (Ed.), *New directions for child development* (Vol. 72, pp. 3-30). San Fransisco: Jossey Bass

Sanchez-Ruiz, M. J., Perez-Gonzalez, J. C., & Petrides, K. V. (2010). Trait emotional intelligence profiles of students from different university faculties. *Australian Journal of Psychology, 62*(1), 51–57.

Sang, L. U. M. (1991). Creativity and Sex Differences in Malaysian Pupils. *Asia Pacific Journal of Education, 11* (2), 62-67.

Sanson, A., Hemphill, S. A., & Smart, D. (2004). Connections between temperament and social development: A review. *Social Development, 13,* 142-170.

Shakeel, S., & Ghayas, S. (2011). *Effect of Handedness and Gender on Creativity Level of Students.* Unpublished Masters Dissertation. Department of Psychology, University of Sargodha.

Struthers, C. W., Menec, V. H., Schonwetter, D. J., & Perry, R. P. (1996). The effects of perceived attributions, action control, and creativity on college students' motivation and performance: A field study. *Learning and Individual Differences, 8* (2), 121–139. Retrieved from http:/ /www.americanscience.org/journals/am-sci/ 0503/02_0520.pdf

Vernon, P. A. (1989). The nature-nurture problem in creativity. *Handbook of creativity: Perspectives on individual differences.* New York: Plenum Press.

Wentzel, K. R., & Asher, S. R. (1995). The academic lives of neglected, rejected, popular, and controversial children. *Child Development, 66,* 754–763. Retrieved, from http://www.enfant-encyclopedie.com/pages/PDF/Hymel-FordANG xp.pdf

Wolfradt, U., & Pretz, J. E. (2001). Individual differences in creativity: personality, story writing, and hobbies. *European Journal of Personality, 15* (4), 297–310. Retrieved from http://www. psycho.univ-paris5.fr/IMG/pdf/Creativity andToleranceofAmbiguity.pdf

Received: October 09, 2012
Revised: December 27, 2012
Accepted: April 03, 2013

Saba Ghayas, Assistant Professor, Department of Psychology, University of Sargodha, Pakistan

Farah Malik, PhD, Associate Professor, Department of Psychology, GCU Lahore, Pakistan, Email: drfarahmalik@gmail.com.