

Verbal Creativity as a Function of Treatment, Gender and their Interaction

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ABSTRACT

Contemporary era has brought with it new competency requirements, challenges, and opportunities for growth in every sphere including academics. The main thrust of this research is to determine the effect of CoRT Treatment, Gender and their interaction on Verbal Creativity of students by considering Pre-Verbal Creativity as Covariate. The hypothesis formulated to guide the study was there is no significant effect of Treatment, Gender and their interaction on Verbal Creativity of students by considering Pre-Verbal Creativity as Covariate. The sample comprised of one hundred and fifty students of B.Ed. first year, which were further bifurcated equally among both Genders. The study was designed on the lines of Non-equivalent Control Group Design. For facilitation of Verbal Creativity, researcher developed 60 exercises using CoRT training program, which were given to subjects at the rate of one exercise per day. Passi Test of Creativity by B.K. Passi was administered at pre and post stages of Treatment. The data collected were analyzed using 2X2 Factorial Design ANCOVA. The result revealed that CoRT Programme was significantly superior to Conventional Method in terms of Verbal Creativity when Pre-Verbal Creativity was taken as covariate. Further both Male and Female students were found to possess Verbal Creativity to the same extent when Pre – Verbal Creativity was taken as covariate. Also Verbal Creativity of students was found to be independent of interaction between Treatment and Gender when Pre – Verbal Creativity was taken as covariate. Based on the findings, it is recommended that stakeholders should use CoRT Programme regularly in the Schools, homes, offices, etc. so that people become Creative and contribute uniquely in different spheres of life. Equal opportunity should be given to every child be it Male or Female. Again, appropriate opportunity should be given to students to utilize their Creative potentials.

KEYWORDS: *Verbal Creativity, Gender, CoRT Programme*

INTRODUCTION

As a social phenomenon, Creativity is facilitated by some social factors and inhibited by others. The process of Creativity involves the development of novel ideas that are useful or influential. Creativity is defined as an aspect of thought, as a personality constellation, and as an interaction between personal properties, thinking and motivation. Creativity means possessing the power or quality to express oneself in one's own way. In this knowledge and technology era, the concept of Creativity is applicable to every field. Various theories have been proposed regarding the concept of Creativity. According to the Psychoanalytic theory, creative thinking has been regarded as a function of the pre-conscious. Creativity is manifested in enormous forms in the arts as well as the science. Creative artists and scientists have existed since times immemorial. Creativity is, in fact, the heart and soul of science. A focus on the nature of the creative person considers more general intellectual habits, such as openness, level of ideation, autonomy, expertise, exploratory behaviour and so on. A focus on place considers the circumstances in which creativity flourishes, such as degrees of autonomy, access to resources and the nature of gatekeepers. Creativity refers to the invention or origination of any new thing (a product, solution, artwork, literary work, joke, etc.) that has value or an old thing in new ways. Creativity is a critical aspect of a person's life starting from embryonic existence onward through adulthood. Creativity is the ability to view and solve problems in different ways, untried and unusual, and to engage in mental and physical experiences that are novel, unique or different. Creativity is currently high in national priorities, generating summons for support from national science research boards (National Academy of Sciences, 2003; National Science Foundation, 2006).

Gender disparity in Academic Achievement has been a controversial issue since centuries. To bridge the gap, an equal learning opportunity to both genders is always encouraged and provisions are provided to the citizens. In the bid to encourage girl child education as a way of balancing school attendance of both male and female, parents were asked to train their daughters in school because when you train a girl, you are training a nation (FRN, 2006).

Concerning researches related to relationship between Creativity and Gender, Brandau et al. (2007) found that Boys presented more alternatives in active behavior than Girls. Matud, Rodriguez & Grande (2007) revealed women with higher education scored higher on Creativity in comparison to those with secondary or primary educational levels on all the measures, but no differences were found among the men in relation to their educational level. Charyton, Basham

& Elliott (2008) revealed that Males and Females tended to have similar levels of General Creativity, yet the most frequently listed Creative eminent persons tended to be Male, Nayak & Mishra (2012), Singh (2014) and Proudfoot, Kay & Koval (2015) reported that Males were more creative in comparison to Females. On the contrary, Al-Srouf & Al-Oweidi (2013), Pathak (2013), Animasahun & Akinade (2014), Kemmelmeier & Walton (2016) and Smith et al. (2016) discovered that Females outperform Males in creativity. They tend to be more creative in comparison to their counter parts. Cheung & Lau (2010) found that specifically, Girls in the Junior High Grades excelled Boys in Verbal Flexibility, Figural Fluency, Figural Flexibility, Figural Uniqueness, and Figural Unusualness. Geniffer et al. (2011) revealed that Male participants' performance on the Creativity measures generally was better than that of Females, with significant differences in Males who were identified with feminine Gender Role characteristics and with androgynous women recording the next highest scores. Ozdemir & Sak (2013) reported Male students had higher scores on Flexibility, Hypothesis Testing and evidence evaluation components too yet the differences between the groups were not significant. Amado et al. (2014) unveiled that Creative technique germinated adaptive consequences on Males while dis-adaptive consequences in the Females. Okereke & Ugwuegbulam (2014) exposed significant difference in the mean scores of Originality and Fluency of Male and Female students while no significant differences existed in Elaboration and total Creativity. Bart et al. (2015) revealed Females scored significantly higher than Males among the XI Grade students on three subtests of Creativity, namely, Elaboration, Abstractness of titles, and Resistance to premature closure; whereas, Males and Females scored equally well on the subtests of Fluency and Originality. Sayed & Mohamed (2013) exhibited no gender differences in Divergent Thinking.

The need of this research is emerged to explore the creativity potential among an important and effective group in the society i.e. students and to study the wedging role of Gender in Creativity. Every education system promises to foster Creativity among their students as it's the bedrock to growth and development of any nation. It is the only succour for meaningful development, this is the reason why the developed nations, still invest heavily on good education. Researchers have tried to facilitate creativity through the use of different strategies like Brain Storming, Morphological Synthesis, Metaphors and Analogies etc. Apart from these there is another strategy CoRT (Cognitive research Trust Programme) given by Edward de Bono which has the potentiality to facilitate the thinking skills. Edward de bono through implication of his programme CoRT claims that Thinking can be taught and if one is able to teach students how to think? One can help them to excel in life.

OBJECTIVE

- To study the effect of Treatment, Gender and their interaction on Verbal Creativity of students by considering Pre-Verbal Creativity as Covariate.

HYPOTHESIS

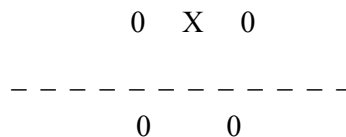
- There is no significant effect of Treatment, gender and their interaction on Verbal Creativity of students by considering Pre-Verbal Creativity as Covariate.

SAMPLE

The present study was experimental in nature. Sample comprised of 150 B.Ed. first year students which were bifurcated equally among Experimental and Control Groups. The group exposed to Treatment was termed as Experimental Group while the other group of students who continued with their routine activities was termed as the Control Group. 75 students of Experimental Group comprised of 38 Males and 37 Females and in Control Group also there were 38 Males and remaining 37 Females. Most of the subjects belonged to rural areas and very few among them were residents of urban area. Bilingual (Hindi and English) method of instruction was adopted. Most of the students' were from business class families, only few belonged to service class.

DESIGN

As the study was Experimental in nature, it was designed on the lines of Non Equivalent Control Group Design. The layout is as follow:



Thinking Training Programme (TTP) constituted the Treatment. Under this programme, special exercises were planned based on Edward de Bono's CoRT Strategy. From the whole CoRT programme twelve Thinking Tools were taken. Each tool comprised of thinking operations around which a number of exercises were developed. On the whole, 60 exercises were given at the rate of one exercise per day. Duration of treatment was 42 hours. To start with, the pretesting of Verbal Creativity was done by administrating Verbal aspect of Passi's Test of Creativity (PTC) to both Experimental and Control Groups separately. Followed by this, treatment was initiated in which subjects were exposed to 60 different exercises. Post test of

creativity was done employing Verbal aspect of Passi's Test of Creativity (PTC) to explore the effect of treatment. Additionally, assessment was done to unveil the effect of gender differences on creativity and effect of interaction between treatment and gender was also assessed

TOOLS

Passi's test of creativity was administered to explore creativity of students. In this study verbal aspects of Creativity were assessed i.e. fluency, flexibility and originality.

Test Retest and Split Half Reliability Coefficients of the PTC

Table-I

Sr. No.	Name of the Test	Test-Retest Reliability	Split-Half Reliability
1	Seeing Problems Test	0.68	0.88
2	Unusual Uses Test	0.97	0.51
3	Consequences Test	0.71	0.80

The total time required for administering this test was 24 minutes excluding the time taken in explaining the tool. The scoring was done as per instructions given in the manual.

PROCEDURE OF DATA COLLECTION

At the outset, the Passi's Test of Creativity was administered separately on subjects of Experimental and Control Groups for assessing Verbal Creativity of students. The Experimental Group was treated through Thinking Training Programme CoRT and the Control Group continued with the normal activities of the classroom. The subjects of the Experimental Group were exposed to orientation about the Thinking Training Programme CoRT. After the orientation, the subjects were exposed to one exercise a day and this procedure was followed for 60 working days. The subjects worked individually in the smaller groups comprising of about nine subjects which was followed by sharing the Thinking with all other members of the group. After having done this, all subjects of Experimental Group assembled and thinking was shared among other sub-groups. The same procedure continued for all the 60 exercises. At the end of the Treatment, the Verbal Creativity of both Experimental and Control Groups was assessed separately by using

Passi's Test of Creativity. After having collected the responses of the subjects the scoring was done as per instruction given in the respective manuals.

ANALYSIS AND INTERPRETATION OF DATA

The objective was to study the effect of Treatment, Gender and their interaction on Verbal Creativity of students by considering Pre-Verbal Creativity as Covariate. There were two levels of Treatments, namely, Cognitive Research Trust Strategy and Lecture Method. Males and Females were the two levels of Gender. Pre- Verbal Creativity was the covariate. Thus the data were analyzed with the help of 2X2 Factorial Design ANCOVA and the results are given in Table-II.

Table-II

Summary of 2X2 Factorial Design ANCOVA of Verbal Creativity by considering Pre-Verbal Creativity as Covariate

Source of Variance	df	SS_{y,x}	MSS_{y,x}	F_x-Value	Remark
Treatment (A)	1	678455.33	678455.33	964.34	p<0.01
Gender (B)	1	201.40	201.40	0.28	
AXB	1	14.66	14.66	0.02	
Error	146	104671.24	716.93		
Total	150				

1.1 Effect of Treatment on Verbal Creativity by considering Pre-Verbal Creativity as covariate

From Table II, it can be seen that the adjusted F-Value for Treatment is 964.34 which is significant at 0.01 level with df=1/146. It indicates that the adjusted mean scores of Verbal Creativity of CoRT Strategy Group and Lecture Method Group differs significantly when Pre-Verbal Creativity was taken as covariate. So there was a significant effect of Treatment on Verbal Creativity of students when Pre-Verbal Creativity was considered as covariate. Thus the Null Hypothesis that there is no significant effect of Treatment on Verbal Creativity of students

when Pre-Verbal Creativity was considered as covariate is rejected. Further the adjusted mean score of Verbal Creativity of CoRT Strategy Group is 193.46 which is significantly higher than those of Lecture Method Group whose adjusted mean score of Verbal Creativity is 59.22 when Pre – Verbal Creativity was taken as covariate. It may, therefore, be said that CoRT Strategy was found to be significantly more effective in comparison to Lecture Method in terms of fostering of Verbal Creativity when Pre – Verbal Creativity was taken as covariate.

1.2 Effect of Gender on Verbal Creativity by Considering Pre – Verbal Creativity as covariate

The adjusted F-Value for Gender is 0.28 which is not significant (Vide Table-II). It indicates that the adjusted mean score of Verbal Creativity of Male and Female students did not differ significantly when Pre – Verbal Creativity was taken as covariate. So there was no significant effect of Gender on Verbal Creativity of students when Pre - Verbal Creativity was taken as covariate. Thus the Null Hypothesis that there is no significant effect of Gender on Verbal Creativity of students when Pre - Verbal Creativity was considered as covariate is not rejected. It may, therefore, be said that both Male and Female students were found to possess Verbal Creativity to the same extent when Pre- Verbal Creativity was taken as covariate.

1.3 Effect of interaction between Treatment and Gender on Verbal Creativity by Considering Pre –Verbal Creativity as covariate

The adjusted F-Value for interaction between Treatment and Gender is 0.02 which is not significant (Vide Table-II). It indicates that the adjusted mean score of Verbal Creativity of Male and Female students treated through CoRT Strategy and Lecture Method did not differ significantly when Pre–Verbal Creativity was taken as covariate. So there was no significant effect of interaction between Treatment and Gender on Verbal Creativity of students when Pre-Verbal Creativity was taken as covariate. Thus the Null Hypothesis that there is no significant effect of interaction between Treatment and Gender on Verbal Creativity of students when Pre-Verbal Creativity was considered as covariate is not rejected. It may, therefore, be said that Verbal Creativity of students was found to be independent of interaction between Treatment and Gender when Pre–Verbal Creativity was taken as covariate.

FINDINGS

1. CoRT Strategy was found to be significantly more effective in comparison to Lecture Method in terms of facilitation of Verbal Creativity when Pre–Verbal Creativity was taken as covariate.
2. Both Male and Female students were found to possess Verbal Creativity to the same extent when Pre–Verbal Creativity was taken as covariate.
3. Verbal Creativity of students was found to be independent of interaction between Treatment and Gender when Pre–Verbal Creativity was taken as covariate.

DISCUSSION

CoRT Strategy was found to be significantly more effective in comparison to Lecture Method in terms of facilitation of Verbal Creativity when Pre–Verbal Creativity was taken as covariate. This finding is supported by Khawaldeh (2016) and Alshurman (2017). They found that Creative Thinking could be developed by using deBono’s CoRT programme. It was interpreted that creativity can be taught using CoRT program which can stimulate the students’ ability to expand, support and elaborate on their ideas by giving many helpful details. The researcher believes that CoRT program helps in development and expansion of understanding as well as perception of the learner. Furthermore, helps him analyze and study all the situation appears before him.

Both Male and Female students were found to possess Verbal Creativity to the same extent when Pre–verbal Creativity was taken as covariate. Sayed & Mohamed (2013), Okereke & Ugwuegbulam (2014) supported the present finding in respect of influence of Gender on Verbal Creativity, may be the opportunities in the modern era are equal and no gender biasness prevails in the society.

Verbal Creativity of students was found to be independent of interaction between Treatment and Gender when Pre–Verbal Creativity was taken as covariate. It manifested that Males and Females belonging to different levels of Treatment were found to have enhanced their Verbal Creativity to the same extent. One of the reasons might be unbiased while dispensing Treatment. The same exercises were given to both Males and Females for same duration. Material, environment and exposure to Treatment were same for both Genders. Additionally, home,

family, social environment which acts as a backdrop to our thinking process is almost identical for both genders in the contemporary era. As the Treatment extended in all spheres to both genders is alike, this might be the reason for present finding.

REFERENCES

- Al-Srouf, N.H. & Al-Oweidi, A.** (2013).The Level of Creativity among Management Employees, Academic Staff and Artistes and Its Relationship with Gender, Practical Experience and Age. *Creative Education, 4 (3), 185-188*. Retrieved on August 8, 2016 from http://file.scirp.org/pdf/CE_2013030816481012.pdf
- Alshurman, W.M.** (2017). The effects of the first part of the CoRT program for teaching thinking (BREADTH) on the development of communication skills among a sample of students from Al al-Bayt University in Jordan. *Educational Research and Reviews, 12(2)*. Retrieved on July 16, 2017 from https://www.google.co.in/url?url=https://eric.ed.gov/%3Fid%3DEJ1126821&rct=j&frm=1&q=&esrc=s&sa=U&ved=0ahUKEwjJ1ZH6qNrXAhUVTY8KHYYDBIcQFggdMAI&usg=AOvVaw0uR_Uh3Z4MFNeCkPN3XL4s
- Baer, J. & Kaufman, J. C.** (2008).Gender differences in creativity. *The Journal of Creative Behavior, 42(2), 75–105*. Retrieved on July 3, 2017 from <http://dx.doi.org/10.1002/j.2162-6057.2008.tb01289.x>
- Bart, W.M., Hokanson, B., Sahin, I. & Abdelsamea, M.A.** (2015).An investigation of the gender differences in creative thinking abilities among 8th and 11th grade students. *Thinking Skills and Creativity, 17, 17–24*. Retrieved on February 10, 2016 from http://ac.els-cdn.com/S1871187115000097/1-s2.0-S1871187115000097-main.pdf?_tid=b7abbab6-67b7-11e7-8081-00000aacb35e&acdnat=1499942622_b2503b41d78ec0c16f8c18e48fe79530
- Cheung, P.C. & Lau, S.** (2010). Gender Differences in the Creativity of Hong Kong School Children: Comparison by Using the New Electronic Wallach-Kogan Creativity Tests. *Creativity Research Journal, 22 (2), 194-199*. Retrieved on February 11, 2016 from <http://www.tandfonline.com/doi/pdf/10.1080/10400419.2010.481522>
- Chryton, C., Basham, K.M. & Elliott, J.O.** (2008).Examining Gender with General Creativity and Preferences for Creative Persons in College Students within the Sciences and the Arts. *Journal of Creative Behaviour, 42 (3), 216-222*. Retrieved on March 11, 2017 from <http://onlinelibrary.wiley.com/doi/10.1002/j.2162-6057.2008.tb01296.x/pdf>

- Geniffer, S., Liegh, M.B., Debra, V. & Fizabetht, H.** (2011). Gender, Gender Role, and Creativity. *Social Behaviour and Personality*, 39 (3), 425-432. Retrieved on November 18, 2015 from https://jgateplus.com/search/search/?q=Gender+and+Creativity&mq=Gender+and+Creativity&fa=subjects_name_l3%2Cauthors%2Cjournal_name%2Cissue_year%2Cpeer_reviewed%2Cresource_type_str%2Cuniv_name%2Cresearcher%2Cguide_name&professionalIndustryJournal=2¤tContext=allJournal&peerReviewedJournal=true&selectedSubjects=4%2C3&reqInitiator=basic&resourceType=0&p=112
- Hmedat, S.R.A.** (2016). The Effectiveness of CoRT Training Program on the Creativity of the Jordanian English Language Learners. *The Arab Journal of Sciences & Research Publishing*, 2(1). Retrieved on March 15, 2016 from https://www.academia.edu/24167983/The_Effectiveness_of_CoRT_Training_Program_on_theCreativity_of_the_Jordanian_English_Language_Learners?auto=download
- Hong, E., Peng, Y., O'Neil, H. F. & Wu, J.** (2013). Domain-general and domain-specific creative-thinking tests: Effects of gender and item content on test performance. *The Journal of Creative Behavior*, 47(2), 89–105. Retrieved on July 1, 2017 from <http://dx.doi.org/10.1002/jocb.26>
- Keller, C.J., Lavish, L. & Brown, C.** (2007). Creative styles and gender roles in undergraduates students. *Creativity Research Journal*, 19 (2&3), 273-280. Retrieved on July 6, 2017 from <http://www.tandfonline.com/doi/abs/10.1080/10400410701397396>
- Kemmelmeier, M. & Walton, A.P.** (2016). Creativity in Men and Women: Threat, Other-Interest, and Self-Assessment. *Creativity Research Journal*, 28(1), 78-88. doi:10.1080/10400419.2016.1125266. Retrieved on February 5, 2017 from <http://www.tandfonline.com/doi/pdf/10.1080/10400419.2016.1125266?needAccess=true>
- Matud, M.P., Roriguez, C & Grande, J.** (2007). Gender differences in creative thinking. *Personality and Individual Differences*, 43 (5), 1137-1147. Retrieved on May 11, 2017 from <http://dx.doi.org/10.1016/j.paid.2007.03.006>
- Molin, F.J.E., Meleró, M.J.R., Prieto, M.F. , Gomez, M.S. & Sanchez, M.D.P.** (2015). Scientific Creativity and High Ability: Gender and Academic Level Differences. *Aula*, 21, 49-62. Retrieved on December 6, 2017 from https://jgateplus.com/search/search/?q=Gender+and+creativity&mq=Gender+and+creativity&fa=subjects_name_l3%2Cauthors%2Cjournal_name%2Cissue_year%2Cpeer_reviewed%2Cresource_type_str%2Cuniv_name%2Cresearcher%2Cguide_name&professionalIndustryJournal=

2¤tContext=allJournal&peerReviewedJournal=true&selectedSubjects=4%2C3&reqInitiator=basic&resourceType=0&p=47

Nayak, M. & Mishra, H.C. (2012). Intelligence And Teacher's rating Of Creativity Among Grade V Children: A Study of Gender Differences. *Journal of Education and Practice*, 3(15). Retrieved on July 16th, 2017 from https://search.yahoo.com/yhs/search;_ylt=A86.J7sitxlazV4A31gPxQt.;_ylc=X1MDMjExNDcwMDU1OQRfcgMyBGZyA3locy1hZGstYWRrX3NibnQEZ3ByaWQDdDNWMjk2RmNTc2l1Sy53MzhpndDQQRuX3JzbHQDMARuX3N1Z2cDMARvcmlnaW4Dc2VhcmNoLnhaG9vLmNvbQRwb3MDMARwcXN0cgMEcHFzdHJsAzAEcXN0cmwDMTM5BHF1ZXJ5A0ludGVsbGlnZW5jZSUyMEFuZCUyMFRlYWN0ZXIIRTIIODAIOTIzJTlwUmF0aW5nJTlwT2YlMjBDcmVhdGl2aXR5JTlwQW1vbmc1MjBHcmFkZSUyMFYlMjBDaGlsZHIJbiUzQSUyMEElMjBTdHVkeSUyME9mJTlwR2VuZGVyJTlwRGlmZmVyZW5jZXMEdF9zdG1wAzE1MTE2MzgwOTc?p=Intelligence+And+Teacher%20%80%99s+Rating+Of+Creativity+Amon+g+Grade+V+Children%3A+A+Study+Of+Gender+Differences&fr2=sb-top&hspart=adk&hsimp=yhs adk_sbnt¶m1 =20170815 & param2 =98647c68-3c91-4195-97b0-9ae2caf831ed & param3=email account~ in~ App Focus1¶m4=d-r2-bb8~Chrome~nofel+2006+on+ CoRT& type=info

Okereke, C. & Ugwuegbulam, C.N. (2014). Gender Disparity in Creative Performance among Senior Secondary School Students in Nigeria. *International Journal of Academic Research in Business and Social Sciences*, 4 (3), 383-389. Retrieved on March 11, 2016 from http://hrmars.com/hrmars_papers/Gender_Disparity_in_Creative_Performance_among_Senior_Secondary_School_Students_in_Nigeria.pdf

Ozdemir, N.N. & Sak, U. (2013). Gender differences in creativity among school students. *Turkish Journal of Giftedness and Education*, 3(2), 53-65. Retrieved on March 21, 2016 from https://jgateplus.com/search/search/?q=Gender+and+creativity&mq=Gender+and+creativity&fa=subjects_name_13%2Cauthors%2Cjournal_name%2Cissue_year%2Cpeer_reviewed%2Cresource_type_str%2Cuniv_name%2Cresearcher%2Cguide_name&professionalIndustryJournal=2¤tContext=allJournal&peerReviewedJournal=true&selectedSubjects=4%2C3&reqInitiator=basic&resourceType=0&p=74

Pathak, N. (2013). A comparative study of creativity among under-Graduate Mathematical gifted boys and girls. *Indian Journal of Applied Research*, 3(5). Retrieved on January 5, 2016 from <https://jgateplus.com/search/search/?q=Gender+and+creativity&mq=Gender+and+creativity&f>

a=subjects_name_13%2Cauthors%2Cjournal_name%2Cissue_year%2Cpeer_reviewed%2Cresource_type_str%2Cuniv_name%2Cresearcher%2Cguide_name&professionalIndustryJournal=2¤tContext=allJournal&peerReviewedJournal=true&selectedSubjects=4%2C3&reqInitiator=basic&resourceType=0&p=76

Pearsall, M. J. , Ellis, A.P.J. & Evans, J. M. (2008). Unlocking the Effects of Gender Fault lines on Team Creativity: Is Activation the Key? *Journal of Applied Psychology, 93 (1), 225-234.* Retrieved on May 23, 2017 from https://jgateplus.com/search/search/?q=Gender+and+Creativity&mq=Gender+and+Creativity&fa=subjects_name_13%2Cauthors%2Cjournal_name%2Cissue_year%2Cpeer_reviewed%2Cresource_type_str%2Cuniv_name%2Cresearcher%2Cguide_name&professionalIndustryJournal=2¤tContext=allJournal&peerReviewedJournal=true&selectedSubjects=4%2C3&reqInitiator=basic&resourceType=0&p=14

Proudfoot, D., Kay, A.C. & Kowl, C.Z. (2015).A Gender Bias in the Attribution of Creativity: Archival and Experimental Evidence for the Perceived Association between Masculinity and Creative Thinking. *Psychological Science, 26 (11), 1751-1761.* Retrieved on January 9, 2017 from https://jgateplus.com/search/search/?q=Gender+and+creativity&mq=Gender+and+creativity&fa=subjects_name_13%2Cauthors%2Cjournal_name%2Cissue_year%2Cpeer_reviewed%2Cresource_type_str%2Cuniv_name%2Cresearcher%2Cguide_name&professionalIndustryJournal=2¤tContext=allJournal&peerReviewedJournal=true&selectedSubjects=4%2C3&reqInitiator=basic&resourceType=0&p=31

Singh, S.K. (2014). Creative Thinking among School Students: Comparisons across Achievement Category, Gender and Residential Background. *Research Journal of Social Science and Management, 4 (1), 62-67.* Retrieved on May 6, 2016 from [http://www.theinternationaljournal.org/ojs/index.php?journal=tij&page=article&op=view&path\[\]=2885&path\[\]=pdf](http://www.theinternationaljournal.org/ojs/index.php?journal=tij&page=article&op=view&path[]=2885&path[]=pdf)

Stephens, K. R., Karnes, F. A., & Whorton, J. (2001). Gender differences in creativity among American Indian third and fourth grade students. *Journal of American Indian Education, 40(1), 1-19.*

Wang, A. Y. (2011). Contexts of creative thinking: A comparison on creative performance of student teachers in Taiwan and the United States. *Journal of International and Cross-Cultural Studies, 2(1), 1-14.*