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Impact of teaching on fluency of adolescents girls

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Abstract

The study was investigate to find out the impact of Teaching on Fluency of Adolescents Girls. Schools and students were selected through random sampling method. In all initially 400 female 9th grade students were taken up and a Divergent Production Abilities Test developed by K. N. Sharma was administered to them to identify their scores on divergent thinking. To minimise the variance among different groups, the subjects (students) were equated on general mental ability, scholastic achievement and parental education by administering tests of intelligence and socio-economic status scale. Mixed type group test of intelligence developed by P. N. Mehrotra was used to collect the data on the verbal and non-verbal intelligence of the subjects.

Keywords: teaching, fluency, adolescents, girls

Introduction

Creativity has been approached differently by different thinkers. Philosophically, creative thinking is not a peculiar type of thinking that has different non-publicly observable features from other types of thinking. For a philosopher a creative thinker is one whose thinking leads to a result, which confirms to criteria of value in one dimension or another. While discussing creativity, Plato made a distinction between artificial art and true art. He said, artists, for him are those who bring into birth some new reality. They are creative as they enlarge human consciousness. Scientifically, creativity involves an imaginative leap to a new perspective. The scientist searches for a hypothesis, which is likely to fit the facts he is concerned with. Pioneer has expressed creativity as the capacity to be surprised, as many scientific discoveries are made just in this way. The scientist observes phenomenon, which many others before him have without getting puzzled. A scientist has the capacity to be surprised anything obvious for others becomes a problem for him, his mind starts working on it and it becomes the beginning of his discovery. What makes him a creative scientist is only partially his ability to solve the problem and the ability to getting puzzled is largely responsible for making him different from the average scientist. Social scientists approach creativity with respect to interpersonal relationships. For him, creativity is a social invention whose product is not an object but persons, creativity in human relationships. Such a person is regarded creative who is intelligent and possesses sharp perceptions, subtle sensitiveness and respect for the individual person, boldness to explain one's point of view and to stand for one's convictions psychologists and psychoanalysts have also approached the creativity but they too differ in their views. Some have equated it with mental health; one has related it to the personality development; while others have restricted it to interplay of unconscious and conscious. Simnot (1959) equates creativity with life itself by virtue of its organising, pattern forming and questing quality. It is only with the imagination, which is a quality of mind, makes possible the creativeness in a man. Murray (1948) defines creativity in terms of the product. For him creation will refer to the occurrence of a composition, which is both new and valuable. New means that the entity is marked by more than a certain degree of novelty or originality, relative to sameness or replication, and valuable means either extrinsically or intrinsically valuable as such to one or more person or generative of valuable compositions in the future. Rogers (1957) sees creativity essentially as a process. Creative process, he defines, that it is the emergence in action of a novel rational product, growing out of the materials, events, people or circumstances of his life on the other. Uniqueness of the individual, he refers to man's tendency to actualise himself to become his potentialities. Roll May (1959) considers creativity as process of bringing something new into birth. He says that we cannot speak of a creative person; we can only speak of a creative act. For what is occurring is always a process, a doing; specifically a process inter-relating the person and his world. Therefore, creativity is the encounter of the intensively conscious human being with the world.

Related Literature

Moslemi (1973) [50] designed controlled experiment with pre and post test to answer the question whether creativity is innate or can be developed. The general hypothesis that intensive training unit with audio-visual materials can enhance creativity was tested on 101 tenth grade students from four classers. The experimental group was exposed to the three-week's training unit. The data did not support the hypothesis, and significant differences occurred only on verbal fluency and flexibility in favour of the experimental groups.

Flescher (1963) has tried to clarify the relationship between creativity and achievement in study in which the validity of implications concerning the comparative influence of unusual creative thinking and exceptional intelligence in the learning process has thoroughly been

studied. He designed this study in the manner involving the two groups left out by Getzols, Jackson, and Torrance in their studies; one characterised by non-extra ordinary intelligence and creativity, and the other by high creativity and high intelligence. He found that there existed a significant relationship between intelligence and scholastic performance while creativity was not related to academic success.

Shan, Hans Raj (1989) conducted a study on effectiveness of certain curricular activities in the development of creative thinking of high school students of the background hilly region of Jammu. The main objectives of this study were to study the effect of teaching through the curricular activities of brainstorming, problem solving, project activity and quiz in comparison to the traditional method of teaching, on the verbal fluency, flexibility, verbal originality and total verbal creative thinking of students. The study revealed that the groups of the students taught science using various curricular activities, namely, brainstorming, problem solving and quiz and project activity, gained significantly in verbal fluency, verbal flexibility, verbal originality, elaboration, non-verbal originality, total non-verbal originality, total non-verbal creative thinking and total creative thinking (verbal and non verbal) as compared to the groups taught by the traditional method of teaching. Problem solving, quiz and project activities were found to be equally effective, though significantly more so in comparison to the use of project activity in the development of total creative thinking among the high school students.

Gupta, Krishna and Kumari (1988) [26] conducted a study on the creative development of secondary school children in relation to sex, intelligence and urban and rural background. The study focuses on the creative development of secondary school children in relation to sex, intelligence and urban and rural background. Two thousand urban and rural Students, between the age of 11-15 years studying in Government aided secondary schools situated in Aligarh district were selected to form the sample of the study. The tools used were: creativity thinking tests (verbal and non-verbal) developed by Giriraj Kishore and Mohsin's General Intelligence Test. The study revealed that urban and rural boys and girls developed rapidly in creativity from the age of 11 (Grade VI) to the age of 13 (I case of boys) and 14 (in the case of girls-Grade VIII), but later there was a sharp decline up to the age of 15 years (Grade X). It was found that in general, girls showed excellence as compared to boys in creative development between the ages of 13-15 years, both in urban and rural areas. The trend of creative development of boys and girls were not linear. Urban students were superior to rural students in creative development, especially during the age of 11-15 years.

Mukhopadhyay, Kishore, k. Chakrabarti, Pranab, K and Kundu, Ramnath (1990) [51] conducted a study on creative development of children. The study was planned to investigate the effect of parental education, sex and hobbies on the creative development of children. The sample comprised 80 most creative and 80 least creative children of the age group 10-11 years studying in class V of urban and semi urban schools. The tools used included general verbal ability test, developed by the researcher a modified version of Torrance tests of creative thinking and an interview schedule. Education was found to be related to creativity. Parental sex as an isolated variable had no impact on creativity. Parental hobbies had a significant impact on creative development. The interaction effect of parental education and sex was important in relation to the development of creativity.

Objectives of Study

1. To assess the effect of the teaching on fluency (word, ideational, associational and expressional) of the female adolescent students.
2. To compare the fluency of experimental group with control group.

Methodology

The study was taken in Kashmir region of J&K state. Schools and students were selected through random sampling method. In all initially 400 female 9th grade students were taken up and a Divergent Production Abilities Test developed by K. N. Sharma was administered to them to identify their scores on divergent thinking. To minimise the variance among different groups, the subjects (students) were equated on general mental ability, scholastic achievement and parental education by administering tests of intelligence and socio-economic status scale. Mixed type group test of intelligence developed by P. N. Mehrotra was used to collect the data on the verbal and non-verbal intelligence of the subjects.

Result and Discussion

Table 1: Significance of Difference between the Mean Scores of Different Groups in Respect to Post Test Word Fluency

Group	N	Mean	S. D	t-Value	Level of Significance
Control Group	70	29.03	4.48	4.04	0.01
Experimental Group I	70	28.23	4.58		
Control Group	70	29.03	4.48	2.32	0.01
Experimental Group II	70	27.06	5.44		
Experimental Group I	70	28.23	4.48	3.43	0.01
Experimental Group II	70	27.06	5.44		

Table 2: Significance of Difference between the Mean Scores of Different Groups in Respect to Post Test Ideational Fluency

Group	N	Mean	S. D	t-Value	Level of Significance
Control Group	70	34.33	5.59	2.34	0.05
Experimental Group I	70	30.18	4.28		
Control Group	70	34.33	5.59	2.30	0.05
Experimental Group II	70	25.58	3.10		
Experimental Group I	70	30.18	4.28	1.64	0.05
Experimental Group II	70	25.58	3.10		

Table 3: Significance of Difference between the Mean Scores of Different Groups in Respect to Post Test Associational Fluency

Group	N	Mean	S. D	t-Value	Level of Significance
Control Group	70	21.11	6.34	2.67	0.05
Experimental Group I	70	34.81	4.23		
Control Group	70	21.11	6.34	3.16	0.01
Experimental Group II	70	26.71	5.79		
Experimental Group I	70	34.81	4.23	1.77	0.05
Experimental Group II	70	26.71	5.79		

Table 4: Significance of Difference between the Mean Scores of Different Groups in Respect to Post Test Expressional Fluency

Group	N	Mean	S. D	t-Value	Level of Significance
Control Group	70	39.40	5.42	1.94	0.05
Experimental Group I	70	26.15	4.64		
Control Group	70	39.40	5.42	2.45	0.01
Experimental Group II	70	23.24	5.65		
Experimental Group I	70	26.11	4.64	1.11	NS
Experimental Group II	70	23.24	5.65		

Table 1 presents the significance of difference between the mean scores of different groups in respect to post test word fluency. The highest mean score of 29.03 is found on Control Group, whereas Experimental Group II shows least mean score of 27.06. The Experimental Group I has shown the mean score of 28.23. However, the highest standard deviation is found on mean score of Experimental Group II by 5.44, followed by Experimental Group I by 4.58 and Control Group by 4.48. Such differences between Control Group and Experimental Group I are found highly significant at 0.01 level on the t-value of 4.04. In respect of Control Group and Experimental Group II, the different is highly significant at 0.01 level on the t-value of 2.32. Between Experimental Group I and Experimental Group II highly significant differences are found on t-value of 3.43.

Table 2 depicts the significance of difference between the mean scores of different groups in respect to post test ideational fluency. Control Group has shown the highest mean score of 34.33, followed by Experimental Group I by 30.18 and Experimental Group II by 25.58. However, the standard deviation of 5.59 is highest on Control Group and lower on Experimental Group I with standard deviation of 4.28. Such differences between the Control Group and Experimental Group I is significant at 0.05 level on the t-value of 2.34. The differences between Control Group and Experimental Group II have also shown the significant difference at 0.05 level on the t-value of 2.30. Again when Experimental Group I is compared with Experimental Group II, significant difference is found at 0.05 level at the t-value of 1.64.

Table 3 shows the significance of difference between the mean scores of different groups in respect to post test associational fluency. The highest score of 34.81 is found on Experimental Group I, followed by mean score of 26.71 by Experimental Group II and 21.11 by Control Group. The highest standard deviation of 6.34 is found on Control Group, followed by Experimental Group II with standard deviation of 5.79 and Experimental Group I by standard deviation of 4.23. Such difference between Control Group and Experimental Group I is significant at 0.05 level at the t-value of 2.67. Similarly, highly significant difference at 0.01 level is observed for Control Group and Experimental Group II at the t-value of 3.16. The t-value of 1.77 has shown a significant difference at 0.05 level between Experimental Group I and Experimental Group II.

Table 4 presents the significance of difference between the mean scores of different groups in respect to post test expressional fluency. It is observed that Control Group has highest mean score of 39.40, followed by Experimental Group I, which attains the mean score of 26.15, and Experimental Group II at 23.24 mean score. However, Experimental Group II obtains the highest standard deviation by 5.65, followed by Control Group at 5.42 and Experimental Group I at 4.64 standard deviation. The difference between Control Group and Experimental Group I is found significant at 0.05 level at t-value of 1.94. The t-value of 2.45 has also shown highly significant differences between Control Group and Experimental Group II at 0.01 level. Nevertheless, an insignificant difference is observed between Experimental Group I and Experimental Group II at the t-value of 1.11.

Summary and Conclusion

While working on different groups with respect to different patterns of study, the highest percentage is obtained by fluency; while traditional method of teaching

gets lowest percentage. In case of fluency, highly significant differences are observed between:

a. Traditional method of teaching and inquiry training method
b. Traditional method of teaching and problem solving method of teaching, and
c. Inquiry training method and problem solving method of teaching

The ideational fluency reveals significant differences between traditional method of teaching and inquiry training; traditional method of teaching and problem solving method; and inquiry training and problem solving method of teaching. Associational fluency has shown highly significant difference with traditional method of teaching and problem solving method. However, significant differences are also observed between traditional method of teaching and inquiry training; and inquiry training and problem solving method of teaching. The inquiry training method and problem solving method are insignificant in its difference at expressional fluency. Nevertheless, significant difference is observed between traditional method of teaching and inquiry training method for expressional fluency. A highly significant difference is also observed for expressional fluency for traditional method of teaching and problem solving method of teaching.

References

1. Alice, Sherryl. Cognitive Therapy and Research, Springer Netherlands, 0147-5916 (Print) 1573-2819 (Online). 2004, 24(6). 10.1023/A:1005583210589, 637-650.
2. American Association of University for Women. Short changing Girls, Short changing America: A Call to Action. AAUW Initiative for Educational Equity, Washington, DC, American Association of University Women, American Association of University Women Sales Office, Annapolis Junctions, MD 20701-0251. 2001.
3. Anderson DN. An Experimental Evaluation of Two Methods for Developing Problem Solving Abilities in an Industrial Art Course, Doctoral Dissertation, Minnesota, University of Minnesota. 1963, 9-31.
4. Anderson HH. Creativity and its Cultivation, New York, Harper. 1959.
5. Anderson JE. The Nature of Abilities, in E. P. Torrance (ed.), 'Education and Talent' Minnesota Press. 1960.
6. Andrews MF. Creativity and Psychological Health, New York, Syracuse University Press. 1961.
7. Arnold JE. Useful Creative Techniques, A source book for creative thinking, Parnes and Harding. 1962.
8. Audrey. Class, Race and Gender in American Education, paper presented at the 33rd Annual Meeting of the College Reading Association, Philadelphia, PA, November 3-5, ERIC Document Service, 7420 Fullerton Rd., Suite 110, Springfield. 1999. VA. 22153-2852.
9. Basadur, Hausdorf. Measuring Divergent Thinking Attitudes Related to Creative Problem Solving and Innovation, Management Michael G. DeGroote School of Business McMaster University. 2003.
10. Basadur, Michael DeGroote G. Efficacy of Creativity, DeGroote School of Business, McMaster University, 1280 Main Street West, Hamilton, Ontario, L8S 4M4, Canada. 1995.
11. Bhan RN. Relationship Between Creative Potential and the level of Aspiration, Journal of Education and Psychology. 1973; 1:51-54.
12. Bhaskera S. A Study of the Effectiveness of Verbal Creative Instructional Material on Students of Different Creative Potentials with Reference to their Socio-economic Status Rural Urban Background, Ph. D Thesis in Education, Barado, M. S. University of Barado. 1982.
13. Campbell, Campbell-Kibler. researched on Girls and Math: Enough is Known for Action, Springer Netherlands. 2005. 0159-6123 (Print) 1754-1865 (Online), 13.1230/A: 1005599210585, 720-822.
14. Christensen PR, Guilford JP. An Experimental Study of Verbal Fluency, Brit. J. Stat Psychol. 1963; 16:1-26.
15. Clewell, Anderson. "Women of Colour in Mathematics, Science and Engineering: A Review of the Literature Centre for Women Policy Studies, Washington, DC. Centre for Women Policy Studies, 2000 P Street, NW, Site 508, Washington, DC. 1991. 20036.
16. Crawford RP. The Techniques of Creative Thinking, Englewood Cliffs, N. J., Hawthorn. 1954.
17. Deborah. The Impact of Cooperative Learning on Suzy and Janie's Attitudes about Math Research Report in Virginia, 1991, ERIC Document Service. 1991. 7420 Fullerton Rd., Suite 110, Springfield, VA.22153-2852.
18. Deshmukh MN. An Analytical Study of Some Scholastic Conditions and Practices as Contributory Factors of Creative Abilities, Ph. D Thesis in Education, Nagpur, University of Nagpur. 1979.
19. Donald, Bennett. Effects of Allowing Examinees to Select Questions on a Test of Divergent Thinking Educational Testing Service, Princeton, New Jersey. 2005.
20. Drevdhal JE. Factors of Importance for Creativity, Journal of Clinical Psychology. 1956; 12:21-26.
21. Eccles, Jacquelynne *et al.* Age and Gender Differences in Children's Self and Task Perceptions during Elementary School, Child Development. 1993-2001; 64(3):830-47.
22. Getzels JW, Jackson PW. Creativity and Intelligence, New york, John Wiley and Sons. 1962.
23. Ghislin B. The Creative Process, New York, Mentor Books. 1955.
24. Gupta AK. Identifying Environmental Factors in Creativity, Creativity News. 1973.
25. Gupta AK. Creativity Research in India, Creativity Newsletter. 1974; 3:18-24.
26. Gupta, Krishna, Kumari. Fifth Survey of Educational Research: 1988-92 Abstracts, Volume-II, NCERT. 1988.
27. Gutbezahl. How Negative Expectancies and Attitudes Undermine Females' Math Confidence and

Performance: A Review of the Literature, Information Analysis -General, ERIC Document. 1995. Service, 7420 Fullerton Rd., Suite 110, Springfield, VA. 22153-2852.
28. Halley Gaz. Psychological abstracts, Developmental Psychology. 1985; 72:1-3. 851/859, 96, Journal of Creative Behaviour.
29. Jackson PW, Merrich S. The person The Product and the Response: Conceptual Problems in the Asessment of Creativity, Journal of Personality. 1965; 33:309-329.
30. James. Effects of Alternative Assessment from the Student's View, paper presented at the Annual Meeting of the American Educational Research Association, Atlanta. 1998. GA, April 12-16, ERIC Document Service, 7420 Fullerton Rd., Suite 110, Springfield, VA. 22153-2852.
31. Jarial GS. Instructional Material for Developing Creativity in Students, Ph.D Thesis in Education, Indore, Indore University. 1981a.
32. Judy. Sex differences in Science Museums; A Review, Curator, v. 37, n. 1, pp. 17-24, March 1994. Kagan, J (1970), "Creativity and Learning", Boston, Beacon Press. 2000.
33. Katherine Hanson. Math Equity in the Classroom: A Vision of Reform from the Urban Mathematics Collaborative; Education Development Centre, USA, California. 2006. EDC 55 Chapel Street, Newton,MA02458-1060.
34. Kogan N. Creativity and Sex differences, Journal of Creative Behaviour. 1974; 8(1):1-14.
35. Kumar G. A Study of Creativity in Relation to Personality Values 7 achievement Motivation, Masters Thesis, Meerut University. 1974.
36. Kusuma A. Creativity and Cognitive Styles in Children, New Delhi, Discovery Publishing House. 1997.
37. Kusuma A. Creativity and Cognitive Styles in Children, New Delhi, Discovery Publishing House. 1997.
38. Lehois G. an Analysis and Synthesis of the Concept of Creativity, Dissertation Abstracts. 1963; 24:1883.
39. Li, Anita, Adamson, Georgina. Gifted Secondary Students' Preferred Learning Style: Cooperative, Competitive, or Individualistic. Journal of Education of the Gifted. 1992; 16(1):46-54.
40. Lisa. Sexism in the Classroom: A Self-Quiz for Teachers, Science Scope. 1994; 17(6):54-59.
41. Lownfeld V. Current Research on Creativity, National Education association Journal. 1958; 74:538-548.
42. Lytton H. Creativity and Education, London, Routledge and Kegan Paul. 1971.
43. Mackinnon DW. Identifying and Developing Creativity, Journal of Secondary Education. 1963; 38:166-174.
44. Mackinon DW. The Nature and Nurture of Creative Talent, American Psychologist. 1962; 38:166-174.
45. Maltzman LS, Siman D. Experimental Studies in the Training of Originality. 1959; 74:(493).
46. McSheffrey. Mathematics Experiences of Women and Girls: A Narrative Inquiry, Master's Thesis, Queen's University. 1992. ERIC Documents service, 7420 Fullerton RD., Suite 110, Springfield,VA,22153-2852.
47. Meadow A, Parnes SJ. Evaluation of Training in Creative Problem Solving, Journal of Applied Psychology. 1959; 43:189-194.
48. Mehdi B. Creativity in Teaching and Learning, National Council of ducation, Research and Training, New Delhi. 1977.
49. Mohit C. Education for Creative and Aesthetic Consciousness, Delhi, Daya Publishing House. 1990.
50. Moslemi MH. The Effect of an Intensive Unit of Instruction in Creative Writing on the Creative Composition of Secondary School Students, Dissertation, Abstract International. 1973; 34(4):1775-A.
51. Mukhopadhyay, Kishore K, Chakrabarti, Pranab K, Kundu, Ramnath. Fifth Survey of Educational Research: 1988-92 Abstracts, NCERT. 1990, 2.
52. Nirpharaske A. Training in Creative Appreciation, Punt, Jnan Prabodhini. 1980.
53. Norman RF, Maier. Problem Solving and Creativity in Individuals and Groups, Belment, California, Book's/Cole Publishing Company. 1970.
54. Olten et al. The Development of Productive Thinking Skills in Fifth Grade Children, Research in Education. 1969.
55. Olten RM *et al*. The Development of Productive Thinking Skills in Fifth Grade Children, Research in Education, ERIC. 1969, 4(1). ED. 021312.
56. Orenstein, Fran. Utilization of Teacher Workshops to Enhance Early Exposure to Gender Equity and Mathematics Education for Young Girls in Preschool Settings. Ed. D. Practicum, Nova University. 1993. ERIC Document Service, 7420 Fullerton Rd., Suite 110,Springfield,VA.22153-2852.
57. Parnes SJ. Programming Creative Behaviour, in C. W. Taylor (ed.), 'Climate of Creativity (Report of the Seventh National Research Conference on Creativity)', New York, Pergaman Press, Inc. 1972, 193-227.
58. Patricia. Math, Science, and Your Daughter: What Can Parents Do?, Encouraging Girls in Math and Science Series, Women's Educational Equity Act Program (ED), Washington, DC. WEEA Publishing Centre, EDC, 55 Chapel Street, Suite 268, Newton, MA02160. 1992.
59. Patricia. What Works and What Doesn't? Ways to Evaluate Programs for Girls in Math and Science Series, Women's Educational Equity Act Program (ED), Washington, DC. WEEA Publishing Centre, EDC, 55 Chapel Street, Suite 268, Newton, MA 02160. 1995.
60. Raina MK. Creativity Research, International Perspective, National Council of Educational Research and Training, New Delhi, NCERT. 1980.
61. Rather AR. Creativity and its Recognition and Development, New Delhi, Sarup and Sons. 1998.
62. Rather AR. Identification and Development of Creativity, New Delhi, Sarup and Sons. 1998.
63. Roka SD. A Comparative Study of Verbal Teaching Behaviour Patterns and Students Achievement in

Terms of Instructional Objectives, Ph. D Thesis in education, Barado, M. S. University of Barado. 1976.
64. Sanders. Lifting the Barriers. 600 Strategies that Really Work To Increase Girls' Participation in Science, Mathematics and Computers, Non-classroom guides, Port Washington, NY 11050. 1994.
65. Shan Hansraj. Identification and Development of Creativity, New Delhi, Common Wealth Publishers. 1993.
66. Staso WH. The Effect of Stimulation Games and Creative Training on Children's Divergent Thinking, Dissertation Abstract International. 1978; 38(7):4060.
67. Stipek, Deborah *et al*. Gender Differences in Children's Achievement-Related Beliefs and Emotional Responses to Success and Failure in Mathematics, Journal of Educational Psychology. 1999; 83(3):361-71.
68. Swetman, Daniel. Rural Elementary Students' Attitudes toward Mathematics, Rural Educator. 1995; 16(3):20-22. 31Spring1995.
69. Torrance EP. Highly Intelligent and Highly Creative Children in Laboratory School, Research Memo. BER-59-7, Minneapolis, a Minneapolis Bureau of Educational Research. 1959.
70. Vosburg. The Effects of Positive and Negative Mood on Divergent-Thinking Performance, University of Bergen, Norway. 1999.