Research Article

Indian Journal of Extension Education
Vol. 58, No. 1 (January–March), 2022, (53-57)

ISSN 0537-1996 (Print)
ISSN 2454-552X (Online)

Mediating Role of School Variables in Anticipating Blocks and Consequences Creativity among Rural Adolescents

Sumit Sheoran[1], Bimla Dhanda[2] and Joginder Singh Malik[3]*

[1]Ph.D. Scholar, [2]Dean & Professor, Department of Human Development & Family Studies (HDFS), I.C. College of Home Science, CCSHAU, Hisar-125004, Haryana, India
[3]Professor, Department of Extension Education & Communication Management, College of Agriculture, CCSHAU, Hisar-125004, Haryana, India
*Corresponding author email id: jsmalik67@gmail.com

ARTICLE INFO

Keywords: ANOVA, Creativity, Haryana, School environment, Young adolescents, Z-test

http://doi.org/10.48165/IJEE.2022.58112

ABSTRACT

Each developmental stage upholds new and its own unique competency requirements, challenges, struggles and opportunities for personal human growth. When an individual is in their early adolescence phase, his/her creativity is greatly influenced by its surroundings and school environment is one of those crucial factors. Hence, the present study was planned to explore the mediating role of school environment in students' blocks and consequences creativity. The primary data was collected from 300 academically bright rural young adolescents. Z-test and ANOVA were administered to discover the influence of independent variables (school environment) on the dependent variables (blocks and consequences creativity). Results elucidated significant differences in blocks fluency, consequences originality and consequences creativity across school type, academic class and teaching method employed by the teachers. Blocks flexibility had significant differences across school type and academic class. Blocks originality was observed to have significant differences across academic class and consecutive academic record. It was revealed that blocks creativity had significant differences across all the independent variables. Consequences fluency of the students had significant differences across school type, academic class and consecutive academic record.

INTRODUCTION

Each period of human development comes up with its own new competency necessities, challenges and prospects for personal growth. For the successful functioning of each stage of life it offers certain prototypic challenges and competency demands. According to Bandura (2006), there are several pathways through life and, at any given phase, people differ substantially in how successfully they handle their lives. The child on his own journey to becoming an adult, during adolescence learns the various tasks of adulthood and forms a unique identity for himself (Erikson, 1963). Adolescence is not just a time period, rather it is process of achieving the desired growth, development, attitude, beliefs and methods for valuable contribution in society as an emerging adult. The manner in which adolescents develop and apply their personal inherent efficacy during this transitional period plays a key role in setting the course their life follows. Hence, adolescents require managing foremost biological, educational and social role transitions parallel (Bandura, 2006). The transition of childhood to middle schools involves major environmental changes that levy personal efficacy. Despite that, in our country adolescence is never considered as a distinct stage and hence the adolescents' needs are not given any special attention over and above their childhood needs. But it is empirically proven that in the process of human development, adolescence marks an important time in the passage between childhood and adulthood [National Association of Social Workers (NASW), 2003]. When an individual is in the phase of adolescence, his quest for self-identity, creativity and personality is being

Received 26-10-2021; Accepted 12-11-2021

molded by various surrounding human ecological factors such as, home and school environments (Bronfenbrenner, 1979).

Creativity is never ending aspect of any person's life starting from conception onward through adulthood. Creativity can be described as the ability to see things in a new manner, to view and solve problems in different ways, which are still not invented, untried, unusual and unique or different from the existing ones (Edwards, 2012). Creative students are as achievement-oriented as their less creative counterpart accomplishers (Beghetto & Kauffman, 2009; Siswono, 2011). Achievement in the area of education is considered very important for children, especially during adolescent years as in this competitive era, educational achievement has become an index of success. In today's world, academic excellence is marked as safe zone for anyone successful future and career security. Therefore, creativity in education is required in providing students' adequate opportunities to extend their current knowledge and possibility to create new ideas (Louca et al., 2014). The capacity to think creatively is influenced by various environmental factors and school environment is the one of these important variables. Although the creativity has elements of spontaneity, many investigators have emphasized on the relevant role that teachers and school environment all together may play in the onset of such creative processes through appropriate environment and the special strategies. By keeping in view such studies, the present research study was designed to assess the influence of students' school environment on their creative potential.

METHODOLOGY

This study was performed on 300 rural young adolescent boys and girls of age group 12 to 14 years from Hisar District of Haryana, India. The participants were selected on criterion-basis and the criterion was their academic brightness. The independent variables (type of school, academic class, consecutive academic record, teaching method employed by teachers and role of teachers in adolescents' creativity enhancement) and dependent variables (sub-aspects of blocks creativity and consequences creativity i.e., fluency, flexibility and originality) were examined in order to determine the differences in young adolescents' creative abilities based on their school environment. Type of school was categorized as Government school and private school. Academic brightness of the young adolescents was defined as 12 to 14 years old students who scored more than 85% from the last three consecutive academic classes. Consecutive academic record denoted the cumulative academic performance of the respondents from the last three academic classes consecutively. Academic class represented the class in which participants were studying at the time of data collection.

Teaching method employed by teachers depicted the particular teaching approach based on any learning theory that aims to achieve maximum learning such as, theoretical, demonstration and mixed method. Role of teachers for creativity enhancement of students was assessed on the basis of the teachers' support which involved delivering classroom instructions, preparing effective lessons, using appropriate teaching method, grading students' work and offering timely feedback, such as appreciating, encouraging, giving physical reward and timely organizing various activities to enhance their creativity. Blocks creativity was studied under four sub-aspects i.e., fluency, flexibility, originality and creativity. Consequences creativity was studied under three sub-heads i.e., fluency, originality and creativity. Fluency means generating as many ideas as possible in any given situation. Flexibility can be described as generating varieties of ideas that are different from each other. Originality can be understood as ideas and thoughts that are new and not simply extension of something already existing. Creativity is the ability to produce something innovative as well as valuable and problem solving based on any given situation.

All the participants were personally interviewed by the researcher. Primary data regarding all independent variables was gathered with self-developed questionnaire-cum-interview schedule. While, the data pertaining to dependent variables was assembled by using standardized Passi Test of Creativity developed by Passi (2006). The data was analyzed and interpreted by using Statistical Package for the Social- Science (SPSS) to calculate Z-test, ANOVA, Mean and Standard Deviation (S.D.).

RESULTS AND DISCUSSION

Highly significant differences were observed in adolescents' consequences fluency ($Z=3.64$, $p<0.01$), consequences originality ($Z=3.83$, $p<0.01$), consequences creativity ($Z=4.11$, $p<0.01$), blocks flexibility ($Z=3.61$, $p<0.01$) and blocks creativity ($Z=3.57$, $p<0.01$). Significant differences were elucidated in respondents' blocks fluency ($Z= 2.64$, $p<0.05$). The research results were supported by other researchers' research findings such as Pany (2014), Vaida (2012); Tasaduq & Azim (2012) who revealed that creativity scores differed significantly among Govt. and private school students (Table 1). Private school students performed significantly better in blocks fluency (Mean = 5.83), blocks flexibility (Mean = 11.41), blocks creativity (Mean = 37.29), consequences fluency (Mean = 20.76), consequences originality (Mean = 17.97) and consequences creativity (Mean = 38.71). The probable reasons behind this performance difference can be various facilities such as, school infrastructure, art activities, sports amenities and other co-curricular activities which are only provided in private schools along with this teacher in private schools also pays more attention towards students. Research results were supported by Singh & Rana (2016) who revealed that overall creativity was highest among private school students. Whereas, contradictory results were obtained by Sharma (2014), who found that level of creativity was highest among Govt. school students as compared to the private school students.

Table 2 revealed highly significant differences for blocks originality ($F = 9.09$, $p< 0.01$), consequences fluency ($F = 8.29$, $p< 0.01$), consequences originality ($F = 6.32$, $p< 0.01$) and consequences creativity ($F= 8.24$, $p< 0.01$), whereas, significant differences were elucidated in blocks fluency ($F = 4.89$, $p< 0.05$), flexibility ($F = 5.72$, $p< 0.05$) and creativity ($F = 4.56$, $p< 0.05$).

The ninth graders were better in blocks fluency (Mean=6.03), blocks flexibility (Mean = 11.44), blocks creativity (Mean = 36.94), consequences fluency (Mean = 21.74), consequences originality (Mean = 17.96) and consequences creativity (Mean=39.69), while eighth graders performed significantly better in blocks originality (Mean = 14.60). The research results were also in line with the research findings of the study conducted by Reddy et al., (2015),

Table 1. Mean differences in adolescents creativity on the basis of school type

Variables	Type of School				Z-value
	Govt. School (n= 150)		Private School (n= 150)		
	Mean	S.D.	Mean	S.D.	
Blocks Fluency	05.17	02.12	05.83	02.21	2.64*
Blocks Flexibility	08.99	05.63	11.41	05.98	3.61**
Blocks Originality	12.37	08.27	13.70	08.79	1.35
Blocks Creativity	29.77	17.18	37.29	19.21	3.57**
Consequences Fluency	16.92	08.46	20.76	09.77	3.64**
Consequences Originality	14.17	07.41	17.97	09.58	3.83**
Consequences Creativity	30.96	14.22	38.71	18.18	4.11**

*, **: Significant at 0.05 and 0.01 percent level of probability, respectively
S.D.: Standard Deviation; n: Sample size

Table 2. Comparison of creativity across academic class

Variables	Academic Class						F-Value
	Eighth (n=131)		Ninth (n=105)		Tenth (n=64)		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Blocks Fluency	05.21[a]	02.29	06.03[b]	02.13	05.22 [a]	01.90	04.89*
Blocks Flexibility	10.12 [ab]	05.79	11.44[b]	06.35	08.31 [a]	04.94	05.72*
Blocks Originality	14.60 [b]	08.79	13.39 [ab]	09.10	09.23 [ab]	05.52	09.09**
Blocks Creativity	33.41 [ab]	18.44	36.94[b]	20.30	28.16 [a]	14.38	04.56*
Consequences Fluency	17.46 [ab]	09.70	21.74 [b]	09.20	16.91 [a]	07.52	8.29**
Consequences Originality	16.00 [ab]	09.27	17.96 [b]	09.04	13.11 [a]	06.08	06.32**
Consequences Creativity	33.47 [ab]	18.03	39.69 [b]	16.72	29.69 [a]	11.38	08.24**

*, **: Significant at 0.05 and 0.01 percent level of probability, respectively
Note: Means in the same row that do not share superscripts differ at p<0.05 using Duncan multiple difference comparison
S.D.: Standard Deviation; n: Sample size

Table 3. Comparison of creativity across consecutive academic record

Variables	Consecutive Academic Record						F-Value
	85% to 87% (n=130)		88% to 90% (n=103)		91% & more (n=67)		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Blocks Fluency	05.25	02.24	05.72	01.98	05.63	02.34	1.45
Blocks Flexibility	09.55	06.03	10.94	05.38	10.31	06.44	1.62
Blocks Originality	11.52 [a]	07.34	14.14 [ba]	09.16	14.27 [b]	09.37	3.65*
Blocks Creativity	30.45 [a]	18.66	35.58 [ba]	17.46	36.34 [b]	19.45	3.23*
Consequences Fluency	16.82 [a]	09.65	21.38 [b]	08.30	18.45 [ab]	09.96	6.98**
Consequences Originality	15.50	08.22	17.15	09.09	15.52	09.22	1.18
Consequences Creativity	33.24	16.64	37.42	15.92	33.97	17.93	1.92

*, **: Significant at 0.05 and 0.01 percent level of probability, respectively
Note: Means in the same row that do not share superscripts differ at p<0.05 using Duncan multiple difference comparison
S.D.: Standard Deviation; n: Sample size

which divulged that participant's academic class had significant impact on their blocks creativity.

Table 3 portrayed highly significant differences in only one domain of creativity i.e., consequences fluency (F = 6.98, p< 0.01), whereas, significant differences were revealed in blocks originality (F = 3.65, p< 0.05) and blocks creativity (F = 3.23, p< 0.05) across consecutive academic record. Respondents who had consecutive academic record of 88 percent to 90 per cent performed better in consequences fluency (Mean = 21.38), while students who scored more than 91 per cent were significantly better in blocks originality (Mean = 14.27) and blocks creativity (Mean = 36.34). The research results were also supported by the two different research studies i.e. Awamleh et al., (2019) and Sumangala (2014), which revealed significant differences for adolescents' creative abilities across their grade point average (GPA). While another study conducted by Anwar et al. (2012) presented contradictory results i.e., there were no significant difference between high and low achievers in terms of their creative thinking.

Another study conducted by Qadir (2014) to investigate the impact of varying personality traits on the academic achievement of male and female adolescents elucidated that personality traits affected their school performance significantly in various subjects including mathematics and general science. Another similar research study conducted by Patil et al., (2018) revealed that various factors such as, family income, parental occupation, lack of expected cooperation from family members, health problems and lack of concentration were probable risk factors leading towards academic backwardness among adolescents.

Table 4 displayed significant differences in blocks fluency (F = 3.84, p< 0.05), blocks creativity (F = 5.19, p< 0.05) and

Table 4. Comparison of creativity across teaching method employed by teachers

Variables	Teaching Method Employed by Teachers						F-Value
	Theoretical (n=126)		Demonstration (n=129)		Mixed (n=45)		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Blocks Fluency	05.90 [b]	02.15	05.16 [a]	02.21	05.36 [a]	02.10	3.84*
Blocks Flexibility	10.93	06.43	09.59	05.39	09.89	05.80	1.71
Blocks Originality	13.29	09.42	12.76	07.77	13.09	08.24	0.13
Blocks Creativity	38.39 [b]	20.38	31.70 [ab]	17.36	30.76 [a]	15.70	5.19*
Consequences Fluency	18.69	09.37	18.81	09.30	19.33	09.43	0.08
Consequences Originality	16.75 [ab]	09.24	14.83 [a]	08.17	17.73 [b]	08.71	7.72**
Consequences Creativity	35.42 [ab]	17.47	33.57 [a]	15.94	36.84 [b]	17.02	5.14*

*, **: Significant at 0.05 and 0.01 percent level of probability, respectively
Note: Means in the same row that do not share superscripts differ at p<0.05 using Duncan multiple difference comparison
S.D.: Standard Deviation; n: Sample size

Table 5. Comparison of creativity of respondents based on role of teachers for enhancement of creativity

Variables	Role of Teachers in Adolescents Creativity Enhancement						F- value
	High (n=33)		Medium (n=110)		Low (n=157)		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Blocks Fluency	05.70	02.72	05.28	02.15	05.61	02.09	0.86
Blocks Flexibility	10.00	05.00	10.24	06.14	10.21	05.98	0.02
Blocks Originality	13.70	07.62	12.46	08.10	13.29	09.05	0.41
Blocks Creativity	30.39[a]	16.96	32.42 [ab]	19.31	38.96[b]	18.35	5.49*
Consequences Fluency	16.82	08.63	19.05	09.30	19.11	09.48	0.87
Consequences Originality	14.12	05.44	16.45	08.91	16.21	09.20	0.94
Consequences Creativity	30.94	12.61	35.50	16.93	35.19	17.35	1.01

***, **:** Significant at 0.05 and 0.01 percent level of probability, respectively
Note: Means in the same row that do not share superscripts differ at p<0.05 using Duncan multiple difference comparison

consequences creativity (F = 5.14, p< 0.05) across teaching method employed by teachers, whereas, highly significant differences were revealed in consequences originality (F = 7.72, p< 0.01).

The participants whose teachers adopted theoretical teaching method performed significantly better in blocks fluency (Mean = 5.90) and blocks creativity (Mean = 38.39), while, the students whose teachers used combination of both teaching methods (theoretical and demonstration) were significantly better in consequences originality (Mean = 17.73) and consequences creativity (Mean = 36.84). Clark (2012) examined the impact of school environment on adolescents' creativity and results elucidated that the creative abilities may be inhibited due to various factors such as, school deadlines, supervisory restrictions, evaluation techniques, reward structure and teachers' attitude towards carving students' creative potential. Along with, Hari et al., (2013) found that socio-cultural factors influenced the educational and occupational aspirations of rural youth. Certain social factors such as teachers, relatives, neighbors, media and social acceptance played important role in the youth' educational and occupational preferences.

Significant differences were elucidated in blocks creativity (F = 5.49, p<0.05), whereas, no differences were revealed in the remaining sub-aspects of creativity. The students whose teachers made high level efforts were significantly better in blocks creativity (Mean= 38.96). Contradictory results were observed by Rose (2016), Budsankom et al., (2015); Devi (2015), who also found that positive student-teacher relationship and better school environment encouraged students in their creative endeavors.

CONCLUSION

On the basis of school type, highly significant differences were revealed in young adolescents' consequences fluency, consequences originality, consequences creativity, blocks flexibility and blocks creativity, whereas, significant differences were elucidated in blocks fluency. Private school students performed significantly better in blocks fluency, blocks flexibility, blocks creativity, consequences fluency, consequences originality and consequences creativity as compared to the Govt. school students. Results showed highly significant differences for blocks originality, consequences fluency, consequences originality and consequences creativity against students' academic class, whereas, significant differences were elucidated in blocks fluency, blocks flexibility and blocks creativity. The ninth graders were better in blocks fluency, blocks flexibility, blocks creativity, consequences fluency, consequences originality and consequences creativity as compared to eighth and tenth graders. Highly significant differences were revealed in only one domain of creativity i.e., consequences fluency across consecutive academic record and significant differences were revealed in blocks originality and blocks creativity. Students who scored more than 91 percent were significantly better in blocks originality and blocks creativity as compared to their low achiever counterparts. Significant differences were displayed in blocks fluency, blocks creativity and consequences creativity across teaching method employed by teachers, whereas, highly significant differences were revealed in consequences originality. Respondents whose teachers adopted theoretical teaching method performed significantly better in blocks

fluency and blocks creativity, while, the students whose teachers used combination of both teaching methods (theoretical and demonstration) were significantly better in consequences originality and consequences creativity. Significant differences were elucidated in blocks creativity across role of teachers in creativity enhancement of the students. The students whose teachers made high level efforts were significantly better in blocks creativity.

REFERENCES

Anwar, N. M., Rasool, S. S., & Haq, R. (2012). A comparison of creative thinking abilities of high and low achievers secondary school students, *International Interdisciplinary Journal of Education, 1*(1), 45-48.

Awamleh, H., Al Farah, Y., & El Zraigat, I. (2019). The level of creative abilities dimensions according to Torrance Formal Test (b) and their relationship with some variables (sex, age, GPA), *International Education Studies, 5*(6), 120-124.

Bandura, A. (2006). *Adolescent development from an agentic perspective: Self-efficacy Beliefs of Adolescents*. Greenwich, CT: IAP – Information Age Publishing.

Begheto, R. A., & Kaufman, J. C. (2009). Do we all have multi-creative potential? *International Journal on Mathematics Education, 41*(1), 39-44.

Bronfenbrenner, U. (1979). *The Ecology of Human Development: Experiments by Nature and Design*. Harvard University Press, Cambridge, Massachusetts.

Budsankom, P., Sawangboon, T., Damrongpanit, S., & Chuensirimongkol, J. (2015). Factors affecting higher order thinking skills of students: A meta-analytic structural equation modeling study, *Journal of Educational Research and Reviews, 10*(19), 2639-2652.

Clark, B. (2012). *Growing up Gifted: Developing the Potential of Children at Home and at School (6th Ed.).* Upper Saddle River, NJ: Merrill Prentice Hall.

Devi, N. (2015). A study of creative thinking of secondary school students in relation to parental disciplinary practices, school climate and need achievement. *Creativity Research Journal, 8*(3), 309–315.

Edwards, B. (2012). *Drawing on the Right Side of the Brain: The Definition (4th Edition)*. ISBN: 978-1-58542-9202.

Erikson, E. H. (1963). *Childhood and Society (2nd Edition).* Rev. and Enl., New York, Norton.

Hari, R., Chander, M., & Sharma, N. K. (2013). Comparison of educational and occupational aspirations of rural youth from farming families of Kerala and Rajasthan, *Indian Journal of Extension Education, 49*(1&2), 57-59.

Louca, E. P., Marouchou, Mihai, S., & Konis, E. (2014). Teaching for creativity in universities, *Journal of Education and Human Development, 3*(4), 131-154.

NASW. (2003). *National Association of Social Workers: NASW Standards for the Practice of Social Work with Adolescents.* Washington DC: NASW

Pany, S. (2014). Creative thinking ability of Government and private school children: A comparative study, *Pedagogy of Learning, 2*(1), 29-36.

Passi, B. K. (2006). *Passi Tests of Creativity*. National Psychological Corporation, Agra.

Patil, M., Hundekar, P. S., & Patil, S. S. (2018). A study on risk factors for academic backwardness, *Indian Journal of Extension Education, 54*(1), 149-154.

Qadir, H. (2014). Impact of personality traits on the academic achievement of male and female adolescents: A study of Block Keller of District Shopian (J & K), *Indian Journal of Extension Education, 50*(3&4), 28-31.

Reddy, K. J., Viswanath, K., & Reddy, S. V. (2015). Impact of demographical variables on non-verbal creativity among high school students, *The International Journal of Indian Psychology, 2*(4), 105-115.

Rose, V. J. L. (2016). A study on factors affecting creativity and teachers impact on it: Students perspectives, *International Journal of Advance Research in Computer Science and Management Studies, 4*(6), 64-66.

Sharma, R. (2014). Effect of school and home environments on creativity of children. Retrieved from www.mierjs.in/ojs/index.php/mjestp/article/viewFile/53/30.

Singh, C. K., & Rana, S. (2016). Creativity and emotional intelligence among adolescents, unpublished thesis submitted for the degree of Master of Science, in the subject of Human Development and Family Studies to the CCS Haryana Agricultural University.

Siswono, T. (2011). Level of student's creative thinking in classroom mathematics, *Educational Research and Review, 6*(7), 548-553.

Sumangala, N. (2014). A study of language creativity of IX Standard students in relation to intelligence and gender, *International Journal of Educational Planning and Administration, 4*(2), 109-112.

Tasaduq, N., & Azim, H. (2012). Creativity levels between private and government school children in Srinagar city (7th -10th grade), *International Journal of Educational Sciences, 4*(3), 255-259.

Vaida, N. (2012). A comparative study on creativity among boys and girls in district Shopian, *International Journal of Social Science Tomorrow, 1*(6), 1-5.