

Effects of a Digital Educative Intervention on Creative Abilities of Children through Home-Based Scientific Participatory Techniques

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Abstract

Education and conducive learning is a process that helps every child to grow and develop a holistic personality. Creativity impacts the way children learn and perform. Creativity is the ability to make or produce new things using skills and imagination. It is important for schools and teachers to induce and encourage creativity among children. Creativity is often described as a tendency to recognize ideas and alternatives that might be useful in solving certain problems. Creativity becomes even more helpful when it is in an applied form to solve problems with innovation. The present study was conducted on a sample of 204 students. Respondents were further categorized on the basis of gender, place of residence and eventually into experimental and control group. The experimental group refers to the group under study which receives the intervention during the course of study that was intended here to find out the variation in the creative quotient before, during and after the implementation of intervention program. Intervention included worksheets based on multiple intelligences, strengths and skillsets. The entire digital programme was taken up for around 12 months. The final assessment reported significant rise in the creative quotient among the subjects of the experimental group.

Keywords:

Creative quotient, Intervention Programme, Rural, Urban

Introduction

Creativity is powerful. It is a strength skill among children which gives them the strength and confidence to do things in the new ways. It involves producing certain ideas which are more original in nature. It helps in gaining knowledge and efficiency to keep pace with the desired output and social expectations. In daily life, it makes the routine interesting and fulfilling. Creativity hails from unique connections between original and aboriginal ideas. Most of us are creative by nature; however this creativity is overpowered by the fear of failure and fear of rejection in most of the cases. It is very important for children to learn, implement and achieve success in terms of academic as well as non-academic aspects so as to enrich their knowledge and enhance their cognitive skills. Education has changed a lot in the present world as compared to the educational system that was prevalent over the past decades. Children happen to learn and gain knowledge through pleasant experiences while unpleasant experiences hamper the learning. Creative ability plays an important role in every aspect of life in the modern world. It is very important for children to gain creativity. Studies relevant to the present research study had been carried on by Fuchs et al. (2006), Ayres and Paas (2009) and Kenth (2009) who traced the relationship between cognitive style, gender and creativity of high school students and recorded a significant correlation between cognitive abilities and academic achievement. Gras, Bordoy, Ballesta and Berna (2010) studied the creative competence of a specific sample of secondary school students taking into consideration their intellectual abilities, response style and academic performance. The results indicated that there were significant relationship among creativity, intellectual abilities, the academic performance and the creativity. Bikar and Talip (2011) carried out a study to find out the relationship between creativity and academic performance among students. The findings of the study indicated that there was a strong correlation between creativity and academic performance. Matovu (2012) undertook a research study to investigate the impact of academic self estimation of students on their creativity and academic achievement. It was found that the creativity levels of students also had a tremendous positive impact on the academic achievement.

Methodology

The study was conducted on a sample of 204 students. Respondents were further categorised on the basis of gender and eventually into experimental and control group. The experimental group refers to the group under study which receives the intervention during the course of study to find

out the variation in the proposed dependent factors. In the present case, dependent variable was the creative quotient to be assessed before, during and after the implementation of intervention program. The control group refers to the group under study which is refrained from the provision of any intervention during the course of study. Intervention included worksheets based on multiple intelligences, strengths and skillsets. Each student was given worksheets according to his own natural learning style which was assessed during the programme.

Table 1: Sampling

Total Sample	Gender	N	Place	n	Experimental Group	Control Group
204	Male	99	Urban	50	25	25
			Rural	49	24	25
	Female	105	Urban	56	26	30
			Rural	49	22	27

At the initial stage, rapport was built with the all the respondents following which their consent was taken. The respondents were encouraged to participate actively and the entire process was explained to them. On the first day of the programme, all the respondents were assessed prior to the intervention, this pre assessment was termed as CQ-1. After the first intervention, the respondents in the experimental group were given customized tasksheets for three months. Students were to attempt two tasksheets daily on regular basis. These tasksheets were different for students with different dominant multiple intelligence which was assessed in CQ-1. In this way, the respondents in experimental group received sheets based on their respective intelligences. However, the subjects in the control group were not given any such worksheets and were thus excluded from the intervention programme. After three months, CQ-2 was conducted on respondents of both the experimental as well as the control group. After this, subjects in experimental group were given tasksheets for next three months while no intervention was given to control group. After this, CQ-3 was conducted following which experimental group received next three months’ tasksheets. Later CQ-4 was conducted and three months’ tasksheets were given to experimental group. After this, CQ-5 was conducted at the final level. In this way, five assessments were conducted in all, on all the respondents but the worksheets

were given only to the subjects in experimental group. The entire programme was taken up over a period of around 12 months.

Result and Discussion

The data was collected and analysed by applying appropriate statistical methods. It was found that there was very less difference in the creative quotient of males in the experimental and control group at the initial stage. Similarly there was almost no difference in the creative quotient of males and females. It was also found that there was negligible difference between the respondents of rural and urban areas. When the creativity was measured at the second stage it was found that the creative quotient of respondents in the experimental group increased slightly while in case of control groups, it remained almost the same.

Table 2: Creative Quotient: Group wise, Male, Gender wise, Experiment Group & Area wise, Male

	Group wise, Male			Gender wise, Experiment			Area wise, Male		
	Place	Group	Mean	Place	Gender	Mean	Group	Place	Mean
CQ1	Rural	Ex	0.55	Rural	M	0.55	Ex	R	0.55
		Co	0.39		F	0.55		U	0.56
	Urban	Ex	0.56	Urban	M	0.56	Co	R	0.39
		Co	0.39		F	0.56		U	0.39
CQ2	Rural	Ex	0.67	Rural	M	0.67	Ex	R	0.67
		Co	0.43		F	0.67		U	0.68
	Urban	Ex	0.68	Urban	M	0.68	Co	R	0.43
		Co	0.43		F	0.68		U	0.43
CQ3	Rural	Ex	0.72	Rural	M	0.72	Ex	R	0.72
		Co	0.46		F	0.71		U	0.72
	Urban	Ex	0.72	Urban	M	0.72	Co	R	0.46
		Co	0.46		F	0.72		U	0.46
CQ4	Rural	Ex	0.76	Rural	M	0.76	Ex	R	0.76
		Co	0.49		F	0.75		U	0.76
	Urban	Ex	0.76	Urban	M	0.76	Co	R	0.49
		Co	0.49		F	0.76		U	0.49
CQ5	Rural	Ex	0.83	Rural	M	0.83	Ex	R	0.83
		Co	0.48		F	0.82		U	0.83
	Urban	Ex	0.83	Urban	M	0.83	Co	R	0.5
		Co	0.45		F	0.83		U	0.5

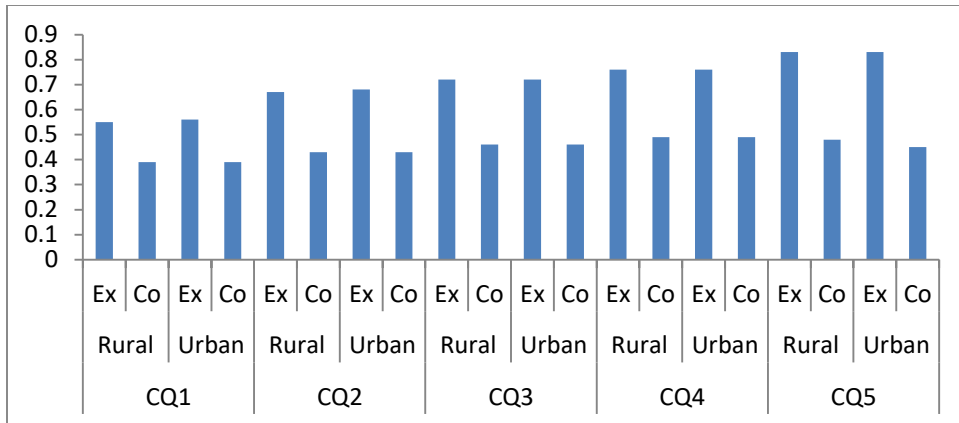


Fig.1: Creative Quotient CQ 1-5 – Males (Area/Groups)

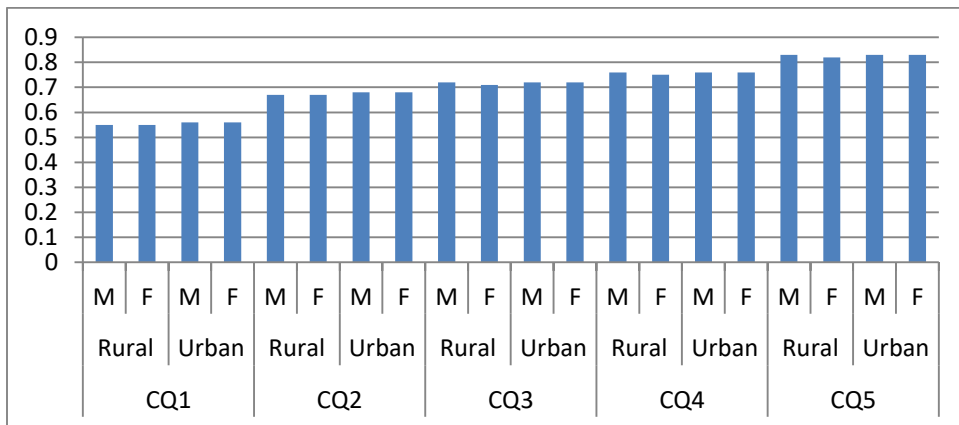


Fig.2: Creative Quotient CQ 1-5 Experimental Group (Area/Gender)

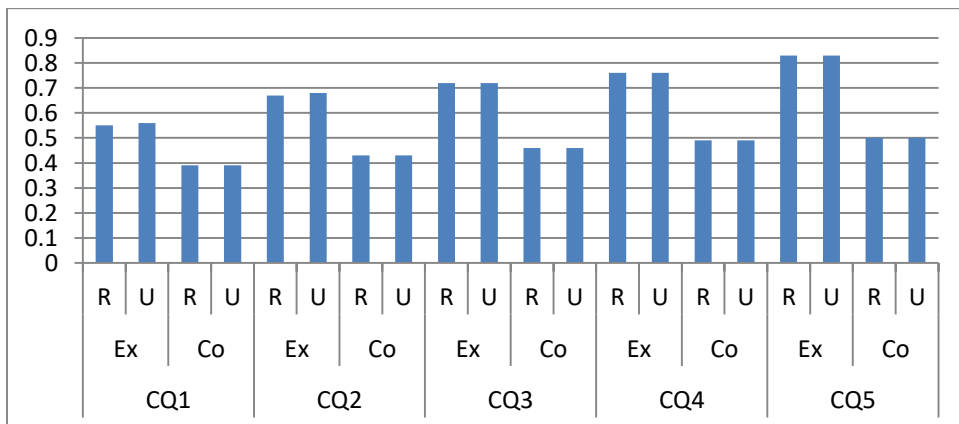


Fig.3: Creative Quotient CQ 1-5 – Females (Groups/Area)

Table 3: Creative Quotient: Group wise, Female, Gender wise, Control Group & Area wise, Female

	Group wise, Female			Gender wise, Control			Area wise, Female		
	Place	Group	Mean	Place	Gender	Mean	Group	Place	Mean
CQ1	Rural	Ex	0.55	Rural	M	0.39	Ex	R	0.55
		Co	0.4		F	0.4		U	0.56
	Urban	Ex	0.56	Urban	M	0.39	Co	R	0.4
		Co	0.38		F	0.38		U	0.38
CQ2	Rural	Ex	0.67	Rural	M	0.43	Ex	R	0.67
		Co	0.44		F	0.44		U	0.68
	Urban	Ex	0.68	Urban	M	0.43	Co	R	0.44
		Co	0.43		F	0.43		U	0.43
CQ3	Rural	Ex	0.71	Rural	M	0.46	Ex	R	0.71
		Co	0.47		F	0.47		U	0.72
	Urban	Ex	0.72	Urban	M	0.46	Co	R	0.47
		Co	0.46		F	0.46		U	0.46
CQ4	Rural	Ex	0.75	Rural	M	0.49	Ex	R	0.75
		Co	0.5		F	0.5		U	0.76
	Urban	Ex	0.76	Urban	M	0.49	Co	R	0.5
		Co	0.49		F	0.49		U	0.49
CQ5	Rural	Ex	0.82	Rural	M	0.5	Ex	R	0.82
		Co	0.44		F	0.5		U	0.83
	Urban	Ex	0.83	Urban	M	0.45	Co	R	0.51
		Co	0.44		F	0.46		U	0.52

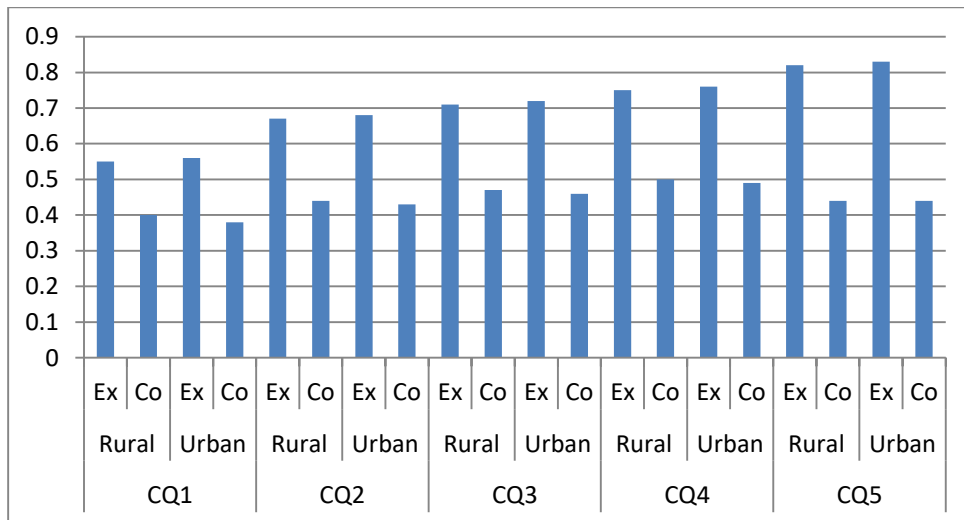


Fig.3: Creative Quotient CQ 1-5 - Females (Area/Groups)

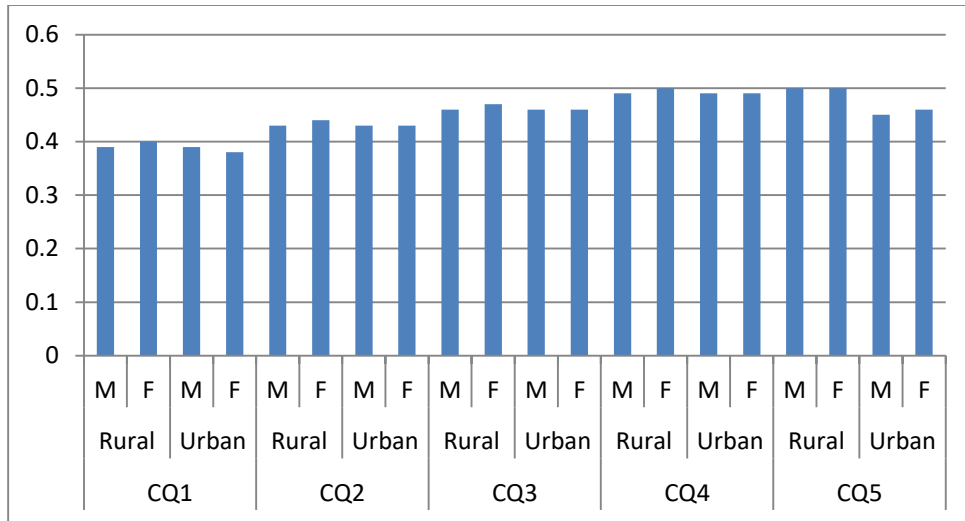


Fig.5: Creative Quotient CQ 1-5 – Control Group (Area/ Gender)

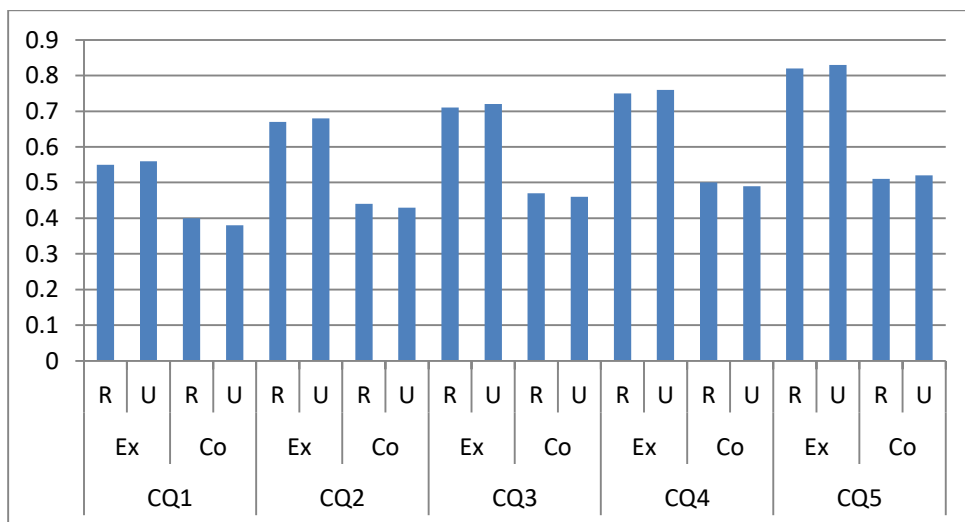


Fig.6: Creative Quotient CQ 1-5 – Females (Groups/Area)

At the third stage when the creative quotient was measured, a significant increase was seen among the respondents of experimental group whereas in the control groups, there was a negligible change. As shown in the tables and the graphs the data was segregated according to gender, place of residence which was termed as area along with the main segregation of control and experimental groups. In the next stage when the creative quotient was measured at the fourth stage of assessment, a significant soar was found in the male respondents of experimental group. In the last two assessments, a very little change was observed in the respondents of the control groups. An absolutely similar trend was found among females of the experimental and

control groups. No clear demarcation was found among males or females of rural or urban areas within the experimental or control groups.

CONCLUSION

The changes in creative behaviour patterns are not a matter to witness an overnight change. It cannot be denied as a fact that changes in terms of creativity and achievement take significant time to become evident. Although in the initial two assessments there was not much difference in the creative quotient of respondents in experimental and control groups, but as more of customised and personalized intervention was given to the subjects of experimental group, the experimental group witnessed a surge in the creative quotient of its respondents.

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