

Impact of Creativity Centre
on Children

BY

Yamuna J. M.

A Dissertation Submitted To The Bharathiar University,
Through Sri Avinashilingam Home Science College for Women, (Autonomous)
Coimbatore, in Partial Fulfilment of the Requirements for the
Degree of Master of Science

MAY - 1988

Acknowledgement

ACKNOWLEDGEMENT

The author expresses her profound thanks and deep felt gratitude to Dr. (Tmt.) N. Jaya, M.Sc., Ph.D., (Madras), Post-graduate Professor and Head of the Department of Child Development, Sri Avinashilingam Home Science Autonomous College for Women, Coimbatore for her inspiring guidance, thought provoking suggestions and constant encouragement rendered throughout the study.

The investigator is extremely grateful to Dr. (Mrs.) Rajammal P. Devadas, M.A., M.Sc., Ph.D. (Ohio State), D.Sc. (Madras), Director and Dean of Post-graduate Studies, Sri Avinashilingam Home Science Autonomous College for Women, Coimbatore, for permitting her to undertake this study at Sri Avinashilingam Eightieth Birthday Commemoration Creativity Centre.

The author owes her heartfelt gratitude and thanks to Dr. (Tmt.) Lakshmi Santa Rajagopal, M.S. (Tennessee), Ph.D. (Madras), Principal, Sri Avinashilingam Home Science Autonomous College for Women, Coimbatore for her help in this study.

The investigator acknowledges her thanks to children and the parents for their kind co-operation during the tenure of this investigation.

The author is highly indebted to her parents and brother, whose earnest help and encouragement had made her task easy.

TABLE OF CONTENTS

CHAPTER		PAGE
	LIST OF TABLES	
	LIST OF FIGURES	
	LIST OF APPENDICES	
I	INTRODUCTION	1
II	REVIEW OF LITERATURE	5
	A. Definitions of Creativity	5
	B. Importance of Creativity	6
	C. Need and objectives of Creativity centre	7
	D. Types and Components of Creativity	9
	E. Factors promoting creativity	12
	F. Characteristics of Creative personality.	15
III	METHODOLOGY	21
	a. Locale of the study	21
	b. Selection of the sample	22
	c. Selection of the Tool	22
	d. Conducting the study	27
	e. Analysis of the data	43

CHAPTER		PAGE
IV	RESULTS AND DISCUSSION	44
	A. Impact of creativity centre on children	44
	B. Creative competence of Children attending and not-attending the creativity centre	54
	C. Impact of creativity centre on children as viewed by parents.	56
V	SUMMARY AND CONCLUSION	60
	RECOMMENDATIONS	64
	BIBLIOGRAPHY	65
	APPENDICES	

LIST OF TABLES

TABLE		PAGE
I	DETAILS OF THE SELECTED SAMPLES	22
II	DETAILS OF THE CREATIVITY TEST USED	26
III	SCHEDULE OF EVENTS IN THE CREATIVITY CENTRE	29
IV	DETAILS OF TRAINING CHILDREN IN CREATIVITY	33
V	TYPE OF CREATIVE ACTIVITIES	45
VI	TIME SPENT IN CREATIVE ACTIVITIES	46
VII	CHILDREN'S AWARENESS OF CREATIVE PLAY MATERIALS	48
VIII	NUMBER OF SONGS AND STORIES KNOWN BY SELECTED SAMPLES	50
IX	HOBBIES DEVELOPED BY SELECTED SAMPLES	51
X	CREATIVITY SCORES OF SELECTED SAMPLES	52
XI	ACADEMIC AND CO-CURRICULAR PERFORMANCE OF SELECTED SAMPLES	53
XII	CREATIVITY SCORES OF CHILDREN	55
XIII	IMPACT OF CREATIVITY CENTRE ON CHILDREN AS VIEWED BY PARENTS	57
XIV	CHANGES OBSERVED BY PARENTS IN THEIR CHILDREN	58

LIST OF ILLUSTRATIONS

PLATES		PAGE
I	INSTRUMENTAL PLAY AND DANCE BY CHILDREN	30
II	CHILDREN ENGROSSED WITH BLOCKS AND CREATIVE SETS	31
FIGURE		
I	ACHIEVEMENTS OF THE CHILDREN BEFORE AND AFTER ATTENDING CREATIVITY CENTRE	53

LIST OF APPENDICES

APPENDIX		PAGE
A	INAGURAL CARD OF CREATIVITY CENTRE	71
B	A NEW TEST OF CREATIVITY	72
C	INTERVIEW SCHEDULE TO ELICIT INFORMATION FROM CHILDREN RELATED TO THEIR CREATIVITY	77
D	INTERVIEW SCHEDULE TO ELICIT PARENT'S OPINION ABOUT CREATIVITY CENTRE	81
E	STATISTICAL APPRAISALS	83

Introduction

INTRODUCTION

Creativity is the birthright of every child. Every child is creative and the main job is to help in organising the right environment of creativity" --Sikander (1987)

With emerging concepts in education, there sets in greater emphasis on creativity and the need to let the child identify his interests and potentialities with the life around. Human beings are endowed with unique powers; of all these powers, creativity is the most unique (Frager, 1984). Clark (1983) rightly exhorts that each individual has within him potentials for creativity that has not been tapped; yet every child has innate resources waiting to be developed. Creativity is distinctively a human activity and one of the more valuable and precious of human qualities (Guy, 1983)

According to Pamela (1985), creativity is like the rainbow reflecting all the colours of human activity and adding a new dimension of life. Evans (1984) claims that an important aim of education today is to foster and stimulate creativity. When creativity is low in a society, it is said to be static than being dynamic. Eccles (1980) regards every aspect of culture and civilization as the fruits of human creativity.

Creativity is universal. It is important to develop creativity and the attitude of being creative at young age (Viktor, 1982). Hendrick (1984) opines that the development of creativity in children has tremendous importance both to individuals and to the society. Art and education has the special mission of developing within children those creative sensitivities which make life productive, constructive, satisfying and meaningful.

Deshmukh (1984) views creativity as the highest form of mental endeavour and achievement. Pragne (1978) and Smith (1982) emphasize that creativity is enhanced by providing congenial environment to children in which creative thinking can flourish.

In creative activity, a person uses his imagination to construct some ordering of objects or ideas that was not present before. It is one of the most deeply enjoyable activities of the human spirit as viewed by Kuppuswamy (1984). Obrich (1984), in his study found that children who were provided with a large number of media for imaginative play developed a greater enjoyment of creative imagination. Torrance (1970) through his research found that children who had chances for creative manipulation of objects had a higher quality

of original ideas than those who had little or no manipulation. These studies vividly indicate the significance of providing congenial environment to promote creativity among children.

Creativity centres are areas in a school or a classroom or elsewhere that has a special focus or that affords a specific opportunity otherwise not possible (Fleming, 1984), Plato once said, "what is honoured in a country will be cultivated there". He surely must have included creative talents among those honoured in a culture. Glenn (1985) rightly exhorts that one of the most essential skill needed for nurturing creative talents is the recognition and acknowledgement of potentialities. The formal system of education at present is not only crippling the creative urges in a child but crushes them over (Sikander, 1987).

According to Mukul (1987), the real wealth of a country depends on the development and nurturance of its natural and human resources. Rajiv Gandhi (1986) has rightly exhorted that the new education policy will lay stress on aesthetics, on the intellect and the development of human resource which could go a longway in producing a generation of learners who are innovative, progressive,

futuristic in orientation and are capable of promoting creative excellence in all spheres of human activity.

The task today is thus to realize the existence of the vast reservoir of creative potential in our children that lies latent and dormant, that needs release, that must be put to work and be developed further. As such, the creativity centres for children are very few in India and attempts to establish the outcome of such centres have been very inadequate. Therefore, the present study was undertaken with the twofold objectives of:

- a. studying the impact of a newly started creativity centre on children and
- b. finding out the influence of creativity centre on children as viewed by their parents.

Review of Literature

II REVIEW OF LITERATURE

The related literature of the study on 'Impact of creativity centre on children' is reviewed under the following headings:

- A. Definitions of creativity
- B. Importance of creativity
- C. Need and objectives of creativity centres
- D. Types and components of creativity
- E. Factors promoting creativity
- F. Characteristics of creative personality

A. Definitions of Creativity

Creativity is the capacity to produce new, previously unknown compositions, products or ideas (Kuppuswamy, 1985). In the words of Richard (1983), it is defined as including both ideas or things in new ways. Creativity implies the production of a totally or partially novel identity as proposed by Stagner (1982). Roger (1982) has defined creativity as the capacity to recombine with unusual sensitivity and spontaneity, the products of experience into new forms.

In Harold's (1980) opinion, creativity is the disposition to make and to recognise valuable innovations. According to Parker (1980), creativity is the art of

seeking out, trying out and combining knowledge in new ways. To gay (1983) and Williams (1984) creativity refers to the capacity of an individual to produce novel or original answers or products. According to Lahey (1983), creativity is the ability to make human products and ideas that are both novel and socially valued. As exhorted by Koestler (1984) creativity is involving associations, the ability to draw together unusual frames of references.

B. Importance of Creativity:

Children love to create. As they work they explore with their senses, gain new experiences and use their imagination. They are expressive in their thoughts and feelings when they make something. They also practice skills with their hands and fingers and co-ordinate and control their muscles (Swaminathan, 1987). The experience of being involved in creative activity satisfies children in ways that nothing else can, and the ability to be creative fosters emotional health, (Singer, 1982). The act of creation enhances the child's feelings of self esteem and self worth (Smith, 1981 and Joanne, 1984).

According to Silver (1982), creative activities foster cognitive growth by providing endless opportunities for trying out ideas and putting them into practice for seeing many alternative ways to solve problems. Blyton (1980)

opines that creative experience provide unparalleled opportunities for expressing emotions.

Being creative is valuable to young children because it adds "spice to their play" - the activities around which their life centers. If creativity can make play pleasurable, children will be happy and contented. This in turn will lead to good personal and social adjustments as expressed by Hurlock (1985).

C. Need and Objectives of Creativity Centres

In progressive countries various after school institutions function. The main objective of such institution is to provide children experiences and opportunities that are beyond the scope of usual academically oriented curriculum and yet are vitally important to the physical, mental and emotional growth of the child.

It is obvious that children need recreational outlets and institutions where they can pursue an activity of their choice, where they can learn to do things for the fun of doing it, where the spirit of play, love of adventure and the pleasure of following one's own inclinations dominates their activity. Such institutions are necessary to live their lives fully with enthusiasm, delight in human interaction, passion and curiosity for understanding the world around (Loyd, 1984).

Every child is born creative. His urge to explore, to investigate, to discover, is unlimited. Giving them opportunities to create is the best preparation for his future. It is thus important to inculcate, motivate, cultivate, develop and nourish creativity in young children. According to Mangal (1982), although creative abilities are natural endowments, yet they are capable of being nourished and nurtured by training or education.

Creative education has a link with learning and action. Review committee on education (1986) emphasised the need for creative education in their reference "If the purpose of education is to nurture the child's capacities to the full and give our people not only a useful occupation, but a full and abundant life, than the creative urge in the children must in every possible way be actively stimulated and cultivated in as many directions as possible". According to Deshmukh (1984), creative education will detect the creative urge and develop it into a creative personality by creating conducive climate for its emergence and by removing all the barriers - internal as well as external in its way.

The varied objectives of creativity centre as pinpointed by Venkateswaran (1987), Santrock (1984), Newman (1984) and Nicholas (1983) are to develop and enhance.

- thinking and explorations
- questioning and curiosity
- Intellectual and physical powers
- Cognition, vocabulary and concentration
- Artistic, Aesthetic and cultural talents
- Children's competence in the arts
- Artistic judgements and standards and
- Awareness of inner responses to external stimuli.

D. Types and Components of Creativity:

Many types of creativity have been identified. According to Taylor (1975) and Baber (1984) there are five types of creativity.

- Expressive creativity
- Technical creativity
- Inventive Creativity
- Emergentive creativity
- Innovative creativity

Expressive Creativity:

This involves spontaneity and freedom in some activity, such as the musical performance.

Technical Creativity:

It is characterized by proficiency in making a product, such as producing toys.

Inventive creativity:

This type of creativity entails a display of ingenuity in finding an unusual combination of relationship among materials, such as inventions of Edison.

Emergentive creativity:

This involves the identification of principles or assumptions underlying certain types of artistic expressions or scientific knowledge such as the work of Albert Einstein or Sigmund Freud.

Innovative creativity:

It is dependant upon the ability to penetrate and understand basic foundational principles already established by others.

Components of creativity:

The three basic components of creativity are Fluency, Flexibility and originality.

Fluency:

It refers to a rapid flow of ideas and tendencies to change directions and modify information. It is the qualitative representation of the units of products. It

emphasizes the rate of production of all the units within all the classes. There are four main elements of fluency.

- Associational Fluency
- Expressional Fluency
- Word Fluency
- Ideational Fluency

Associational Fluency

It refers to the production of ideas or words from a restricted area in equal relationships.

Expressional Fluency:

It includes the production of new ideas to fit a system or logical theories which facilitates construction of sentences.

Word Fluency:

It refers to the generation of words of specifically required epithets, drawn by divergent production process using semantic contents to give a product of units.

Ideational fluency:

It refers to the generation or production of ideas where free expression is encouraged and where quality is not evaluated.

Flexibility:

The readiness to change behaviour to meet changing circumstances is regarded as flexibility which represents the number of classes of objects or trains ideas produced. It is an indication of the distinct ways an individual can respond to a stimuli. There are two main types of flexibility.

- Spontaneous flexibility
- Adaptive flexibility

Spontaneous flexibility:

It refers to the production of diversity of ideas in a relatively unrestricted situation.

Adaptive flexibility

It refers to the divergent transformation quality which involves changes.

Originality:

It refers to the unusual idea and suggestions for unusual applications of particular objects.

E. Factors Promoting Creativity:

To be most affective, the circumstances encouraging creativity must be built into the total context of life. Highly creative activities are to be nurtured as away of life

rather than by the use of set of specific devices; creative activities are fostered by the social climate of the individual's life and are modified by a complex set of perceptual, conceptual, linguistic, motivational and attitudinal process.

Hurlock (1985) enlists the following as conditions that foster creativity.

Time:

To be creative, children must not be so regimented that they have little free time to try with ideas and concepts and try them out in new and original forms.

Solitude:

Only when away from the pressures imposed on them by the social group can children be creative. As Singer(1982) has explained, "It takes time and solitude to develop a rich imaginative life".

Encouragement:

Whatever be the achievement of children, they must be encouraged to be creative and free from the ridicule and criticism.

Materials:

Play and other materials must be supplied to stimulate experimentation and exploration, since they are essential elements of all creativity.

Stimulating Environment:

Both the home and school environments must stimulate creativity by providing guidance and encouragement to use the materials that will encourage creativity. This should be done as early as babyhood and continued through the school years by making creativity an enjoyable and socially recognized experience.

Unpossessive parent-child relationship:

Parents who are neither overprotective nor overpossessive encourage their children to be independent and self reliant, two qualities that contribute heavily to creativity.

Child training methods:

Democratic and permissive child training in the home and school foster creativity while authoritarian training stifles it.

Opportunities to acquire knowledge:

Creativity cannot take place in a vacuum. The more knowledge children can acquire, the better the foundations on which to build creative productions. As Pulaski (1984), has said "children must have content in order to fantasize".

Various other modes, techniques and ways to foster creativity as listed by Charles and James (1981), Mangal (1982), Walson (1980) and Taylor (1985) are as follows:

- Encourage diversity and individuality
- encourage individual initiative
- freedom to respond and provision of self oriented learning
- encouraging originality and flexibility
- providing the self examples and ideas
- using the creative resources of the community
- developing healthy habits among children
- encourage manipulation of objects and ideas
- assist children in coping with frustration and failure.
- encourage self evaluation and dispel the sense of awe of masterpiece.

F. Characteristics of Creative Personality:

The child with a rich advanced storehouse of images, concepts and rules and who uses these units of cognition in an original and constructive way is creative (Kuppuswamy, 1984). A creative thinker is one who explores new ideas, makes new observations and new predictions (Venkateswaran, 1987). In the views of Mussen et al (1984) children are creative if they use and possess rich and

varied units (Schemata, images, symbols, concepts and rules) in original and constructive ways.

A creative person's thinking is dynamic, flexible, original and novel as put forward by Vatsyayan (1982). According to Richard (1980), a creative individual is generally one whose mental and physical works are judged by the 'Society' to be original and unique. To the extent that a person makes, invents or thinks something that is new to him, he may be said to have performed a creative act (Margaret, 1982). Possessing superior ability to generate, visualize, dramatize or illustrate a new idea, concept or product are the special characteristics of the creative child as mentioned by Wein (1980). Openness to experience, maintaining an internal locus of evaluation, and the ability to try with elements and concepts are additional characteristics of creative personality as pinpointed by Rogers (1982).

According to Srivastava (1987), a creative child will travel to the unknown and display the following characteristics:

- sense of wonder and curiosity
- intense feeling about the world around him.
- sensitivity to fine distinctions on the structure processes of his environment

- vivid imagination .
- unusual power to envision new structures and processes and to express his visions in speaking, writing, art, music or some other form.
- visualises actions and things from descriptions .
- produces work that has freshness, vitality and uniqueness.
- Adjusts to and enjoys new situations .
- continually questions the status quo .
- does the unexpected ,
- applies learning from one situation to different situation .
- solves problems in the aesthetic field.

As a sum up, the list of characteristics of creative personality as pinpointed by Torrance (1970) on the basis of various studies, techniques, tests and inventories are as follows:

- Accepts disorder
- Adventurous
- , - Strong Affection
- Altruism
- Awareness of others
- Always baffled by something
- Attracted by disorder

- Attracted by mysteries
- Attempts difficult jobs (sometimes too difficult)
- Bashful outwardly
- Constructive in criticism
- Courageous
- Deep and conscientious conventions
- Defies conventions of courtesy
- Defies conventions of health
- Desires to excel
- Determination
- Differentiated value hierarchy
- Discontented
- Disturbs organization
- Dominant (not in power sense)
- Emotional
- Emotionally sensitive
- Energetic
- A Fault finder
- Doesn't Fear being thought different
- Feels whole parade is out of step
- Appears Haughty and self satisfied at times
- Full of curiosity
- Likes solitude
- Independence in judgement
- Independence in thinking

- Individualistic
- Intuitive
- Industrious
- Introversive
- Keeps unusual hours
- Never bored
- Over conforming
- Non hostile or Negative
- Persistent
- Becomes Preoccupied with a problem
- Preference for complex ideas
- Questioning
- Radical
- Receptive to external stimuli
- Receptive to ideas of others
- Reserved
- Resolute
- Self assertive
- Self aware
- Self starter
- Self confident
- Self sufficient
- Sense of humour
- Sensitive to beauty

- Sincere
- Shans power
- Not interested in small details
- Speculative
- Spirited in disagreement
- Strives for distant goals
- Stubborn
- Temperamental
- Tenacious
- Timid
- Tender emotions
- Thorough
- Unconcerned about power
- Unwilling to accept anything on mere words
- Unsophisticated, Naive
- Visionary
- Versatile
- Willing to take risks
- Somewhat withdrawn and quiscents

-
Identification of characteristics of creative personality paves way for the nurturance and fostering of creativity and in channelising the inherent potentials towards constructive ends, both to the individuals and to the society.

Methodology

III METHODOLOGY

The methodology of the study on " Impact of creativity centre on children" is presented under the following heads.

- a. Locale of the study
- b. Selection of the sample
- c. Selection of the tool
- d. Conducting the study
- e. Analysis of the data

a. Locale of the study:

Sri Avinashilingam Eightieth Birthday Commemoration Creativity Centre inaugurated (Appendix A) by Hon'ble (Smt) Margaret Alva, Minister of State, Department of Youth Affairs, Sports and Women and Child Development, Ministry of Human Resource Development, Government of India, on 18 October 1987, first of its kind located at Alagesan Road, Coimbatore- 43 was selected for conducting the study. This centre consisted of a big hall of the size 6 metres x 12 metres; a small room of the size 6 metres x 3 metres and outdoor space of 25 metres x 40 metres, promising great hope to provide for creative tasks.

b. Selection of the sample

A heterogeneous group of boys and girls in the age group of 6-13 years who joined the creativity centre and who attended it regularly over a period of five months constituted the sample, as presented in Table I.

TABLE - I

DETAILS OF THE SELECTED SAMPLES

Age (Years)	Number	Sex		Class studying							Medium	
		Boys	Girls	I	II	III	IV	V	VI	VII	E	T
6-8	6	3	3	1	3	2	3	2	2	2	12	3
8-10	5	3	2									
10-12	4	3	1									

Totally there were nine boys and six girls, mostly (12) studying in English Medium Schools. Another group of nine boys and six girls of same age, sex, school, class and economic status, who were not attending the creativity centre were also selected to form control group.

c. Selection of the tool:

A standardised test suitable to all age groups namely " A New Test of creativity" constructed by Romapal (1986) was used to measure creativity. The measurable

parameters of the test were fluency, flexibility and originality.

1. Fluency

Fluency refers to a rapid flow of ideas and tendencies to change directions and modify information. Five types of fluency have been considered in this test.

i. Associational fluency

Associational fluency refers to the production of ideas or words from a restricted area in equal relationships.

ii. Expressional fluency

Expressional fluency includes the production of new ideas to fit a system or logical theories which facilitates construction of sentences.

iii. Word fluency

Word fluency indicates to the generation of words of specifically required epithets, drawn by divergent production process using semantic contents to give a product of units.

iv. Ideational fluency

Ideational fluency refers to the generation or production of ideas where free expression is encouraged and where quality is not evaluated.

v. Educational fluency

Educational fluency signifies to the production of varied concepts and facts oriented towards general reasoning and up to date knowledge.

2. Flexibility

Readiness to alter behaviour to meet changing circumstances is regarded as flexibility which represents the number of classes of objects or ideas produced. Three types of flexibility are considered in this test.

1. Spontaneous flexibility

Spontaneous flexibility denotes to the production of diversity of ideas in a relatively unrestricted situation.

ii. Adaptive flexibility

Adaptive flexibility refers to the divergent transformation quality which involves changes.

3. Originality

Originality indicates to the unusual idea and suggestions for unusual applications of particular objects.

Among the test items of 'New Test of Creativity', odd items were chosen for initial assessment while even items were selected for final assessment. This approach was adopted in order to avoid the influences of children becoming familiar and oriented with the test items in the

final assessment. The details of the number of items and scores attributed to the tests are presented in the following table.

TABLE II

DETAILS OF THE CREATIVITY TEST USED

Components of Creativity	Total No. of test items in the tool	No. of items chosen for initial test (odd items)	No. of items chosen for final test (even items)	Scores given	Initial	Final
I. Fluency						
1. Associational Fluency	8	4	4	4 x 5	20	20
2. Expressional Fluency	4	2	2	2 x 5	10	10
3. Word fluency	10	5	5	5 x 5	25	25
4. Ideational fluency	6	3	3	3 x 5	15	15
5. Educational fluency	2	1	1	1 x 5	5	5
II. Flexibility						
1. Spontaneous flexibility	8	4	4	4 x 5	20	20
2. Adaptive fleibility	6	3	3	3 x 5	15	15
3. Innovative flexibility	2	1	1	1 x 5	5	5
III Originality						
	4	2	2	2 x 5	10	10
					----- 125	----- 125

Grand total of scores: 250

d. Conducting the study

This study was conducted in three phases as indicated below.

- I phase : Pre-evaluation and planning of activities for creativity centre
- II Phase : Conducting the creativity centre
- III Phase : Assessment of the impact of creativity centre on children and parents.

I Phase: Pre-evaluation and planning of activities for Creativity centre

Pre-evaluation included;

- Collection of the data through an interview schedule (Appendix C). The questions of the interview schedule related to the awareness of creative play materials, time spent in creative activities, liking of children towards dance, music, books and other creative activities, hobbies, number of songs and stories known and use of musical instrument before attending the creativity centre.

- Administration of the odd, items of the standardized 'Romapal creativity test' as detailed in (Appendix B) to both the children attending the creativity centre and their counterparts not-attending the creativity centre.

II Phase : Conducting the creativity centre

The creativity centre functioned for three hours on two days in a week. Since children were loaded with home work from the schools, they were engaged doing the same at home during school days and so they preferred the centre functioning only on holidays. As training children in creativity was the main objective, the centre had systematic, but flexible programme of activities.

The schedule of events followed in the creativity centre over a period of five months is furnished in the following table.

TABLE III
SCHEDULE OF EVENTS IN THE CREATIVITY CENTRE

Days	Session	Activities
First Day	I	- Dance, Music and songs
	II	- Reading literature and framing new words - Free play - Group games
	III	- Dramatics make believe play - Arts and craft activities.
Second Day	I	- Dance - Music and songs
	II	- Story telling - Spontaneous free play
	III	- Exercise for positive and negative emotional expressions through monoacting mimicry, sole play etc - Traditional games.

The activities as seen in the table centered around dance, music, dramatics, freeplay, arts and craft activities. (Plates 1 and 2).

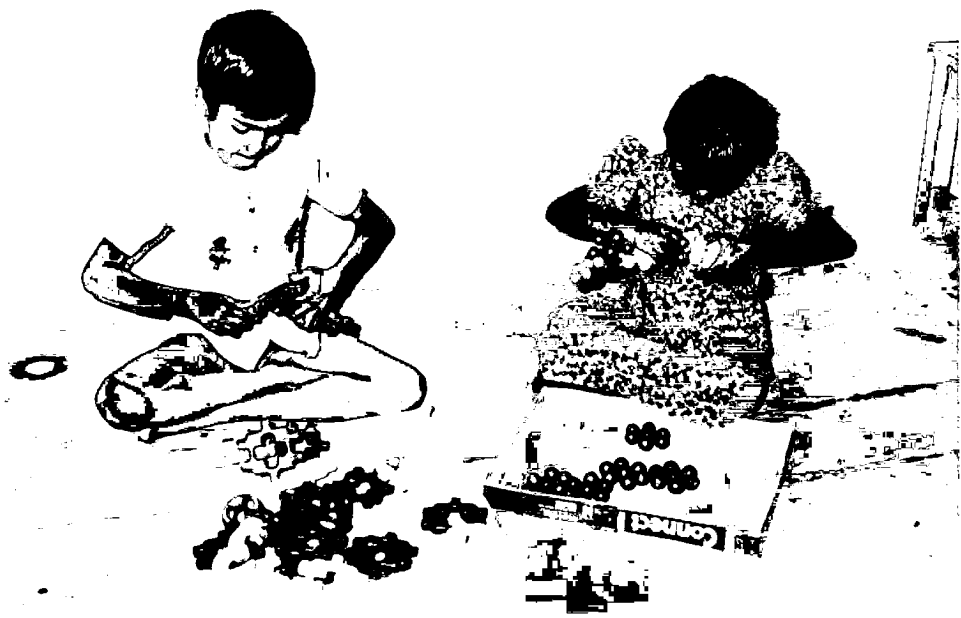
PLATE -1

INSTRUMENTAL PLAY AND DANCE BY CHILDREN



PLATE: - 2

CHILDREN ENGROSSED WITH BLOCKS AND CREATIVE SETS



Training children in creativity:

The creativity centre utilised the services of a vocalist cum dancer, an instrumentalist and an art master for coaching in the respective fields. The investigator undertook the responsibility of organising games and language training sessions. The following table IV describes the details of different activities pursued for the children attending creativity centre and their objectives.

TABLE IV
DETAILS OF TRAINING CHILDREN IN CREATIVITY

Session and activities	Description of activities	Objectives
I Day First session comprised of Dance, music and song	Dance: Children were taught both traditional Bharatha Natyam and folk dances; facial, hand, bodily expressions through various Abinayams Music: Training in classical and light music; handling various types of musical instruments like Miruthangam, Jalra, Minipiano, flute and drums; rendering of devotional songs/Bhajan; songs of patriotic favour and national integration	<ul style="list-style-type: none"> - Inculcation of cultural values and heritage - Promotion of small and large muscular movements Impart - knowledge on various musical instruments - concept of rhythm - clear confident speech - patriotic spirit

Session and activities	Description of activities	Objectives
Second session consisted of Reading Literature, free play, Framing new words, group games and group work	Training in reading various books and classical literature	Build - correct concepts - good reading habits - new ideas
	Framing new words from long single words	Promote - Vocabulary and wordpower
	Play with various types of toys and materials available at the creativity centre such as wooden blocks, missing links, built in sets, Gigo blocks etc.	Enhance - exploration and experimentation
	Group work like creative puzzles, building structures and group games	Develop - conformity to rules - teamspirit and co-operation

Session and activities	Description of activities	Objectives
Third session included Dramatic play arts and craft activities	Training in Dramatics/make believe play through language and pantomime modes Arts and craft activities like drawing, painting, scrapbook making, marbling, paperwork and handicrafts.	Initiation to - imbibe culture and national heritage - learn role identity and socialization Promotion of - aesthetic sense - imagination and inventions

Session and activities	Description of activities	Objectives
II Day		
First and second session included dance, music story telling and unstructured free play	Stories on various themes, morals and epics, folktales, fairy tales and fiction	Development of moral and ethical values
Third session was full of exercises for positive emotional expressions and traditional games	Training in positive and negative emotions through mimicry, monoacting and presentation of episodes that may require apt emotional reactions.	Aid in release of pent up emotional feelings.
	Training in traditional games such as carom, chess, snakes and Ladder.	Enrich mental reasoning and competence.

PROVISION OF CREATIVE EQUIPMENT AND MATERIALS

Children cannot develop in vacuum and so challenging items of creative equipment and materials were provided at the creativity centre under the auspices of Sri Avinashilingam Education Trust, Coimbatore- 43.

Various creative equipment and materials provided to the children in the creativity centre are enlisted under the following heads.

1. Creative puzzles
2. Drawing and painting materials
3. Blocks of assorted shapes and sizes
4. Musical instruments
5. Phonograph records and book cum record items.
6. Cassettes
7. Dolls and various types of toys
8. Multilevel reading programme laboratory kit.

1. Creative puzzles

- Jigsaw "Ponda" puzzle
- Waddington's Leisure puzzle
- Jigsaw Dolls house
- Chess and Draught
- Scrabble, crossword game

- Stitch 'N' learn
 - Teach a tot sentence builders
 - Rainbow links
 - Zoom picture puzzle
 - OK-Tel superstar game
 - My word 48 playing cards
 - Table soccer
 - Snit's revenge
 - Joy Town Tea set
 - 'Connect four'
 - Snakes and ladder
 - Ring Toss
 - Spelling and counting wheel
 - Fix-o - picture blocks
 - Toon - A- vision
 - Carem
2. Drawing and Painting materials
- Rainbow colour book
 - Drawing books
 - Flash cards
 - Crayons
 - Colour pencils
 - Brushes
 - Water colour boxes

- Oil paints
- Sketch pens
- Water colours
- Colour powders
- Chalk's in assorted colours
- 3 Blocks of Assorted Shapes and sizes
- Diamond Decolum creative set
- Star design Board
- Threading disc
- Threading stick
- Threading blocks
- Rectangular decolum creative set
- 'E' shaped building set
- Triangular decolum creative set
- Triangular cardboard creative set
- Flower shaped creative set
- wooden creative set
- Coloured arches
- ~~Rounded~~ Shaped
- Square shaped
- Rectangular shaped
- Triangle shaped
- Flat round
- Conical shaped
- Rounded cylindrical

- Hexagon
- Polygon
- Pentagon
- Half arch
- Half arch butt
- Doublong
- Quadlong
- Oblong
- Square
- Roman arch
- Halfcircle
- Column
- Pillar
- Diagonal
- Triangle
- Ramp
- Gothic arch
- Elliptical curve
- Half curve
- Floor board
- Roof board
- Large buttress
- Half pillar
- Quarter pillar
- Gothic door
- Quarter curve

- Quarter circle
- 'Y' switch
- Half circle
- Double triangle

4. Musical Instruments

- Miruthangam
- Jalra
- Rattlers
- Drum
- Tambourine
- Minipiano
- Thabala
- Moraco
- Flute

5. Phonograph Records and Book cassettes

- Scholastic records
- Peterpan records
- Disneyland long playing records

Book records such as

- 'The piped piper of Hamelin'
- 'All about Animals'
- 'Little Brave Sambo'
- 'Numbers'
- 'Letters'
- 'Tweeday Tales'

- 'Going to school'

6. Cassettes

- 'Time to be happy'
- 'Little things'
- 'Nursery Rhymes'

7. Dolls and other types of toys

- Puppets
- Ball
- Battery train
- Plastic air toys
- Soft toys
- Wooden toys
- Mechanical toys
- Igloohouse model
- View master
- Robotdoll
- Typewriter
- Musical pocket radio

8. Multilevel reading programme laboratory kit

- Teachers handbook
- Starter booklets
- Student record book
- Coloured pencils

- Key cards
- Wall chart
- Power builders.

III Phase: Assessment of the impact of creativity centre
on Children & parents

Using the same interview schedule administered initially, the improvements in the children due to their attendance in the creativity centre were elicited. The even items of the 'Rompal Creativity test' were also administered to this group as well as to the other group which did not attend the creativity centre.

As for the parents of children attending the creativity centre, a questionnaire was developed as detailed in Appendix D, to know their views on the changes observed in their children after attending the creativity centre and how they were benefitted.

e. Analysis of the data

The initial and final scores of children attending and not-attending the creativity centre were compared using the paired test of significance to predict the influence of creativity centre.

Results and Discussion

IV RESULTS AND DISCUSSION

The findings of the study on "Impact of Creativity Centre on Children" are discussed under the following heads.

- A. Impact of creativity centre on children
- B. Creative competence of children attending and not-attending the creativity centre.
- C. Impact of creativity centre on children as viewed by parents.

A. Impact of creativity centre on children

This part vividly pictures the impact of Creativity Centre on Children in terms of children's preference of types of creative activities, time spent by children in creative activities, awareness of creative play materials, number of stories and songs known, various hobbies developed and creativity scores of children on administering the standardized 'New Test of Creativity' before and after their attendance in the creativity centre.

a. Types of creative activities preferred

Types of creative activities preferred by the children are enlisted in Table V.

TABLE V
TYPES OF CREATIVE ACTIVITIES

Types of creative activities	In percentage N = 15	
	Before	After
Painting	60	100
Paperwork	60	100
Claywork	53	100
Woodwork	53	100
Collage work	47	93
Scrapbook making	47	93
Drawing	47	100
Marbling	47	100

The data reveals that lesser number of children had known creative activities such as paper work, painting, clay work, wood work, collage work, scrapbook making, marbling and drawing. After a period of five months of attendance in the creativity centre, majority of children projected awareness of these activities. Perhaps the

above finding of this study is supported by Roshan's (1986) view point that the training in creativity help children to become familiar with them thoroughly and programmes which exercise hands, eyes, ears train the creative capacities of children for betterment.

b. Time spent by children in creative activities

Table VI shows time spent by the selected samples in creative activities

TABLE VI
TIME SPENT IN CREATIVE ACTIVITIES

Activities	Frequency									
	Often		Daily		Weekly		Whenever		ra-	
	B	A	B	A	B	A	feels like	rely	B	A
1. Drawing	7	7	-	86	27	-	33	-	40	-
2- Painting	7	7	7	86	27	-	33	-	40	-
3. Paperwork	7	7	7	86	27	-	33	-	40	-
4. Claywork	7	7	7	86	27	-	33	-	40	-
5. Marbling	-	7	-	86	27	-	33	-	40	-
6. Collagework	-	7	-	86	27	-	33	-	40	-
7. Woodwork	7	7	7	86	27	-	33	-	40	-
8- Scrapbook making	7	7	7	86	27	-	37	-	40	-

B = Before

A = After

It is striking to note that, children after attending the creativity centre spent more time in creative activities. This reflects their creative urge being channelised and nurtured through their persistent attendance in the creativity centre. Eighty six per cent of them exhibited keen interest in engaging themselves daily in various types of creative activities such as drawing, paper work, marbling, painting, clay work, scrapbook making and woodwork. Joans (1986) echoes that creative activities are an outlet for emotions pent up, a means for expression of abilities, a source of enjoyment and an avenue for developing motor skills and concepts of form, texture, colour and special organisations. It is perhaps these advantages that enthuse them to go in for and pursue creative activities regularly.

c. Children's awareness of creative play materials

Table VII reveals the awareness of children regarding various creative play materials.

TABLE VII
CHILDREN'S AWARENESS OF CREATIVE PLAY MATERIALS

Types of creative play materials	Number in percentage N = 15	
	Before	After
Creative puzzles	40	100
Ring toss	40	100
Creative mosaic work	33	100
Wooden blocks	33	100
Gigo blocks	33	100
Rainbow links	33	100
Built in sets	33	100
Missing links	33	100
Interlocking sets	33	100
Spelling and counting model	33	100

Only 33 per cent of the selected children were aware of various creative play materials such as creative puzzles, ring toss, creative mosaic work, wooden locks, Gigoblocks, rainbow links, built in-sets, missing links, interlocking sets and spelling and counting model when they were interviewed before they had joined the creativity centre. It is rewarding to note that all the children had become fully aware of many of these creative play

materials after attending the creativity centre.

This may be perhaps due to their continuous attendance in the creativity centre which offered them an opportunity to develop increased sensitivity and awareness of all sense through its multipronged activities listed in Table VII. Freeman (1985) has supported this outcome, in that he has reported that the greater the opportunity for creative experience, the greater will be the creative learning and competence.

d. Number of songs and stories known

Table VIII indicate the number of songs and stories known to children before and after attending the creativity centre.

TABLE VIIINUMBER OF SONGS AND STORIES KNOWN BY SELECTED SAMPLES

Number	Number in in Percentage N = 15		
	Before	After	
Songs	Nothing	60	--
	1 - 3	20	--
	4 - 6	20	6
	7 - 9	-	14
	Morethan 10	-	80

Stories	Nothing	50	--
	1 - 3	30	--
	4 - 6	20	6
	7 - 9	--	7
	More than 10	--	87

It is impressive to note that attendance in the creativity centre has promoted children's musical talent. Eighty per cent of the children attending the creativity centre had learnt more than ten songs and stories while only less number were known to them earlier. This clearly indicates the quantitative gain of children in terms of songs and stories. In these days of "Media world" which limits the creative expressions of children and tunes them to be mere spectators, the role of creativity centre in teaching them songs and stories involving their participation is appreciable.

e. Various hobbies developed

That IX depicts the various hobbies developed by children before and after attending the creativity centre.

TABLE IX
HOBBIES DEVELOPED BY SELECTED SAMPLES

HOBBIES	Number in Percentage N=15	
	Before	After
Reading books	68	100
Philately	14	93
Collection of cartoon figures	14	100
Indoor games (Chess, Scrabble, Carom)	7	100
Outdoor games (tennis, football, badminton, basket ball)	7	100

The data highlights the fact that children after attending the creativity centre developed varied hobbies. All the children had exhibited keen interest in specific indoor, outdoor games, in reading books and in collection of cartoon figures and 93 per cent became interested in philately. Thus creativity centre proved to be a place which aids in widening the children's horizon of interest, mental calibre and efficient use of leisure time.

f. Creativity scores

Table X consolidates the creativity scores of children before and after their attendance in the creativity centre.

TABLE X
CREATIVITY SCORES OF SELECTED SAMPLES

Components		Mean	S.D.	't' value
1. Fluency	Initial	45.3333	5.9361	X
	Final	69.7333	1.8308	X 10.3**
2. Flexibility	Initial	15.7333	4.1997	X
	Final	37.5333	1.5976	X 17.87**
3. Originality	Initial	2.1333	7.86667	X
	Final	0.7432	0.915476	X 37.41**
. Total	Initial	64.2	9.9009	X
	Final	64.93	9.7062	X 21.75**

** Significant at P = 0.01 (ie) at 1% level of significance

The statistical appraisals revealed significant difference at one per cent level between the initial and final creative performance of children. This marked noteworthy progress in the acquisition and promotion of

creative skill and urge in children could be due to their regular attendance in the creativity centre. Bush (1980) rightly concords that creativity is greatest in those children who are given an opportunity to touch, to use tools and to transform objects.

g. Academic and co-curricular performance

Table XI figures the academic and co-curricular performance of children.

TABLE XI

ACADEMIC AND CO-CURRICULAR PERFORMANCE OF SELECTED SAMPLES

Details	Number in percentage N = 15	
	Before	After
- position in the class-Top rank (1-5)	14	73
participation in		
- essay writing, oratorical	14	80
- art activities like drawing, painting, printing	33	93
- soloplay, dramatics, dance light music, skit, monoactive	40	93
- various indoor and outdoor games	40	100

It is interesting to find that as an outcome of creativity centre attendance, children attending excelled remarkably in their academic and co-curricular activities.

ACHIEVEMENTS OF THE CHILDREN

BEFORE AND AFTER ATTENDING CREATIVITY CENTRE

SCALE
100% - 10 Percent
□ - BEFORE
▤ - AFTER

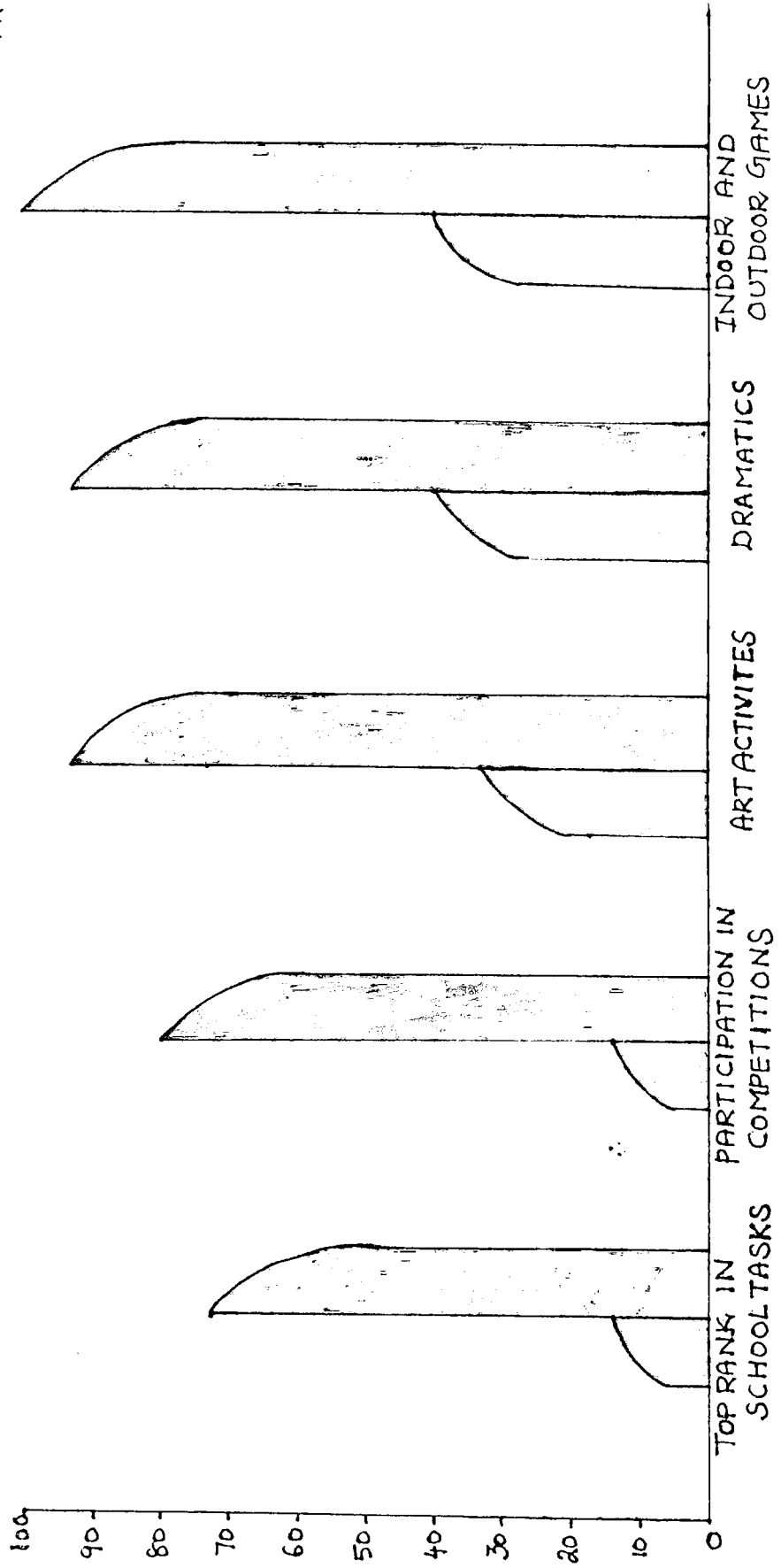


FIGURE - 1

Seventy three per cent of them had become top rankers. About 80 per cent of the children had confidently participated in games, competitions and cultural programmes. This obviously brings to focus the importance of after school institutions such as creativity centre in order to channelise and promote child's creative tempo, calibre and efficiency.

B. Creative competence of children attending and not-attending the creativity centre

Table XII highlights the creative competence of children who attended the creativity centre and their matched counterparts who did not join the creativity centre.

TABLE XII
CREATIVITY SCORES OF CHILDREN

Components	Those atten- ding creativity centre		Those Not-atten- ding the creati- vity centre		S.E.	t.value
	Mean ₁	S-D ₂	Mean ₂	S.D. ₂		
1. Fluency						
Initial	45.333	5.93617	45.2	5.518	2.0927	0.6371 ^{NS}
Final	69.733	1.83088	45.2	5.478	1.49177	16.4458 ^{**}
2. Flexibility						
Initial	15.733	4.1997	15.6667	3.1997	1.36324	0.4890 ^{NS}
Final	37.533	1.3976	16.2	3.2337	.931288	22.9074 ^{**}
3. Originality						
Initial	2.1333	.74322	1.9333	.703732	.264275	.75678 ^{NS}
Final	7.86667	.91547	2.0666	.703732	.298142	19.4538 ^{**}
4. Total						
Initial	63.2	10.3799	64.2	9.900093	3.70379	.269991 ^{NS}
Final	115.13	3.63137	64.93	9.70616	2.68032	18.7291 ^{**}

** Significant at P = 0.01 (ie) at 1% level of significance

N.S. Not significant

Creativity scores of children attending creativity centre were significantly higher at one per cent level than their counterparts who were not attending the creativity centre. This marked difference may be attributed to the creativity training carefully planned and implemented (shown in Table III & IV) over a period of five months at the creativity centre for

the children. Gowandall (1986) emphasizes rightly that creative achievement which like all forms of competence depends upon nurturing and opportunity at all levels of human ecology. Apparently his hypothesis has been proved in this study. How best such creativity centres could be organised in the school itself needs to be explored through further research since not all children are able to benefit out of such creativity centres. Further such creativity centres need wide publicity in order to attract and enrolé many more children.

C. Impact of creativity centre of children as viewed by parents

Table XIII puts forward the impact of creativity centre on children as viewed by parents.

TABLE XIIIIMPACT OF CREATIVITY CENTRE ON CHILDREN AS VIEWED BY PARENTS

Impact	Number in Percentage
	<u>N = 15</u>
	After
Constructive use of leisure	80
Social contacts	86
Self confidence	86
General reasoning	86
Creative bend of mind	93
Character	93
Sharing responsibilities with others	93
Scientific outlook	93
Co-operative attitude	100
Independence attitude	100

It is impressive to note that more than 80 per cent opined that constructive use of leisure, social contacts, self confidence, general reasoning, creative bend of mind were inculcated in children through their attendance in the creativity centre; 100 per cent opined that attitude of co-operation, independence had been provoked in their children. Sikander (1987) apprehends that every child possesses the creative bend of

mind. What it needs is the environment where its imagination takes wings. The same idea seems to be reflected in the positive values of parents regarding the benefits of creativity centre.

Table XIV presents the changes observed by parents in their children after joining and participating in the creativity centre.

TABLE XIV
CHANGES OBSERVED BY PARENTS

Observed Changes	Number in percentage N = 15
	After
Active and energetic	93
Acquisition of refined behaviour patterns	100
Thoughtful	100
Increased thirst for knowledge	100
Plays without disturbing parents	100

The responses of 93 per cent of the parents of selected children reflected that their children had become active and energetic due to their participation in the creativity centre. All the parents remarked that their children had acquired refined behaviour patterns such as following directions, accepting suggestions, displaying pleasant disposition and have become thoughtful.

knowledge loving and well disciplined. They were highly pleased and contented to remark that their children have become less disturbing to them; disturbance from their children was much less enabling them to do their tasks peacefully and enjoy little leisure time. As Mussen, Konger and Cogan (1984) propose that children should be helped to visit the creative, scientific or art centres to be inspired for being and becoming creative, all the parents of children attending the creativity centre, stressed the need for children to attend creativity centre since it enhances the span of knowledge of the children and kindles the spark of creativity among them.

Summary and Conclusion

V SUMMARY AND CONCLUSION

The children who attended Sri Avinashilingam Eightieth Birthday Commemoration Creativity Centre regularly from November, 1987 till March, 1988 were considered for the study. They were given training in creativity by specialists along with the provision of various creative toys, equipment and games. The children were assessed initially and finally after a period of five months by using the Romapal's 'A New Test of Creativity'. A matched group of the same number who did not attend the creativity centre were also administered the Romapal's New Test of creativity. The children who participated in the creativity centre and their parents were interviewed to elicit the outcomes of creativity centre.

The findings of the study are summarised and presented below

1. Children had become thoroughly familiar with various types of creativity activities such as painting, paperwork, woodwork, collagework, scrapbook making, drawing claywork and marbling.

2. All the children had become aware of many creative play materials after attending the creativity centre.

3. Children after attending the creativity centre spent more time in creative activities. 86 per cent of them exhibited keen interest in engaging themselves daily in one or other type of Creative activity.

4. A larger number of children (80 per cent) attending the creativity centre had learnt more than ten songs and stories, while only less number were known to them earlier before their participation in the creativity centre.

5. Children after attending the creativity centre developed hobbies such as philately, reading books, collection of cartoon figures, indoor games such as chess, scrabble and caram and outdoor games such as tennis, badminton, football and basketball.

6. The difference between the initial and final creative performance of children enrolled in the creativity centre on the creative test was significant statistically.

7. Creativity scores of children attending creativity centre were significantly higher at one per cent level than their counterparts who were not attending the creativity centre.

8. Children attending the creativity centre excelled remarkably in their academic and co-curricular activities, in that seventy per cent of them had become top rankers in their academic work; about 80 per cent of them had confidently participated in games, competitions and cultural programmes.

9. More than 80 per cent of the parents opined that participation of their children in the creativity centre had enabled them to develop constructive use of leisure, social contacts, self confidence, reasoning and creative bend of mind. All the parents were happy to report instances of better co-operation with peer group and elders in their children.

10. All the parents remarked that their children had acquired refined behaviour patterns such as following directions, accepting suggestions, displaying pleasant dispositions and were more thoughtful, knowledge loving and well disciplined due to their participation in the creativity centre. They remarked that they were disturbed less because of their children's attendance in the creativity centre.

Creativity is a valuable part of human development and must be nourished and encouraged in out of school institution. Mores (1985) has echoed that most children's present well being and the future capacity for

meeting life are definitely strengthened by attendance at well run centres for children conducted by people who understand principles of child development. No doubt the findings of the present study firmly supports his percept.

Creative ability which seems to be a barometer of our present and future progress cannot blossom in vaccum, it needs to be properly nurtured. Therefore conditions congenial to creativity should be actively promoted-for creativity is a valuable asset of a nation.

Contd.

Recommendations emerging out of these findings are:

1. Educational institutions must integrate creative tasks in the curricular and co-curricular activities since creative abilities are capable of being nourished and nurtured by training and education.
2. The marked significance of participating in after school institutions such as creativity centres can be emphasised in schools.
3. The crucial necessity of establishing more number of such creativity centres can be taken into consideration by various welfare organisations, service clubs, educational trusts and other voluntary organisations.
4. Wide publicity and popularity of the need for creative experiences and creativity centres could be promoted among the public to create awareness of this important dimension.

Bibliography

BIBLIOGRAPHY

- Audrey Haker, and
Richard Runyon, P.
1984
Psychology of adjustment. The
Dorsey Press; Illinois: pp.70-72 .
- Bernard Spodek
1982
Handbook of research in early
Childhood education. Macmillan
publishers; London: pp.149-200 .
- Benjamin Lahel, B
1983
Psychology. Brown company
Publishers; Iowa: P.263 .
- Blyton is Barton
Newman, R.
1980
Development through life. The
Dorsey Press; Illinois: P-449 .
- Doreen Draft and
Robert Hess, D.
1972
Teaching of young children
Houghton mifflin Company;
Newyork: P-239 .
- Deshmukh, M.N.
1984
Creativity in Classroom. Chand and
Company Limited; New Delhi.
pp. 85 - 90 .
- Eccles in
Evelyn Weber
1980
Early childhood Education:
perspectives on change. Charles
and Jones Company; Ohio:pp-10,33 .
- Ellis Evans, D. and
Boyd Mccandless, R.
1984
Children and Youth: Psychosocial
Development: Dryden Press;
Illinois: pp. 214 - 222 .

- Felix, A. Inculeating reading habit in Children
1987 in Hindu; Jan. 27, P.10 .
- Guy Lafrancis, R. Psychology. Wadisworch Publishers,
1983 California; pp 230-234 .
- Glenn Myers Blair Educational Psychology. Macmullan
1985 Company; INC; Newyork: pp 254-261 .
- Gerard Nierenberg The art of creative thinking.
and Osborn Simon & Schuster publishers; Newyork
1982 pp. 195 - 200 .
- Hendrick in David Cognition. Bacon publishers;
Dodd Toronto: p. 317 .
1984
- Harold in Hurlock, E.B Child Development. Mc Graw Hill
1984 International Book Company; Tokyo:
pp
- Holly Brisbane, E The developing child. Banett and
1980 Meknight publishers; Illinois: p.347 .
- Henry Glatman Basic psychology. W.W. Company;
1983 London: p. 207 .
- Henry Murray A Endeavors in psychology. Harper
and Nicholas and Row Publishers, Sydney: pp.317-500 .
1981
- James Adams, F. Understanding psychology. Allyn and
1980 Bacon publishers; Toronto; pp.155-157 .

- Joanne and Jerome
Kagan
1984
The nature of the child. Basic
book publishers; Newyork:pp222-224.
- James Parker
1980
The exceptional Individual. Prentice
hall publishers; Newyork:pp.210-222.
- John Wilson,A.R. and
Williams 1984
Psychological Foundation of learning
and teaching. McGraw Hill International
Book company; Toronto: pp.134-211.
- John Santroc and
Singer
1982
Lifespan Development. Brown Company
publishers; Toronto: P.270.
- Joanne Randahetmore
1980
Giftedness comflict and under
achievements. Allyn & Bacon inc;
Sydney: Pp.131 - 149 .
- John Dececco P.
& William R. Crowford
1984
The psychology of learning &
Instructions. Prentice Hall Inc,
Newjersey: pp.345- 346 .
- John Stewart Bewey
1979
Adolescents today. Good year
publishing company; California;P.113 -
- Kuppuswamy,B.
1984
A Textbook of Child Behaviour and
Development. Vikas publishing House;
New Delhi;P. 134 .

- Mukul Maloh, R.W. Psychology. Macmillan Book Company ;
1984 Toronto; P. 212 .
- Marysime Read your Child. Thames and Hudson
1980 Publishers; London: pp.138-140 .
- Martinbloom Life Span Development. Macmillan
1985 Publishers; New York: pp.145-147 .
- Minaswaminathan Play activities for young children
1987 UNICEF; New Delhi: P. 65 .
- Paul Torrance, E. Rewarding Creative Behaviour.
1960 Prentice hall; USA: pp.10-11,112 .
- Pamela Mays Teaching Children through the
1985 environment. Hodder and sloughton
company; Toronto; pp. 225 - 230 .
- Philip Zimbardo Psychology and Life
1979 Scott Company; London: pp. 520-524 .
- Robert White, W The Enterprise of Living. Holt,
1976 Rinehart and Winston Inc; USA;
PP.408 - 409 .
- Robert Best, C. Applying psychology: understanding
1982 people. pretice hall Inc. Toronto
P.210.
- Ronald Smith and Psychology; The Frontiers of
Barbara Santrock, R. Behaviour. Harper International;
1982 Sydney: P.382.

- Roger in Vatsyayan Educational psychology. Kedarnath
1982 Publishers; Meerut: pp.290-305.
- Robert Frager & Personality and personal growth
Names Fedeman Harper and Row Publishers; New Delhi
1984 P 101.
- Robert Fred Bales Personality and interpersonal
& Taylor behaviour. Holt, rinehart &
1975 Winston; Sydney: P. 153 - 154, 366.
- Srivastava, P.A. Fundamental of Child Engineering
1987 K Block Saket; New Delhi, pp.49-50.
- Sharma Dynamics of Creativity. National
1979 Psychological Corporation; Agra;
pp.81-85.
- Sikander Social Welfare, Vol. XXXIV No.7
1987 Oct. 87, CSWB; New Delhi; pp.12-15.
- Victor Lorenfield Creative and mental growth
1982 Macmillan publishers Company Inc,
Newyork; pp.67-92.
- Department of Child A guide book for Anganwadi Workers
Development and women, P. 153.
Ministry of Human
Research Development
Government of India
New Delhi.

1987.

Appendices

APPENDIX - AINAUGURAL CARD OF CREATIVITY CENTRE

The Director, Staff and Students of
SRI AVINASHILINGAM EDUCATION TRUST INSTITUTIONS
COIMBATORE - 641 043

Cordially Invite you for the opening of the

**Sri Avinashilingam Eightieth Birthday
Commemoration Library and Creativity
Centre for Children**



on Sunday the 18th October, 1987, at 11.30 a.m.
by

Hon'ble (Smt.) MARGARET ALVA
Minister of State, Department of Youth Affairs, Sports and women and
Child Development, Ministry of Human Resource Development,
Govt. of India.

Dr. (Smt.) RAJAMMAL P. DEVADAS
M.A., M.Sc., Ph.D. (Ohio State), D.Sc. (Madras)
Director, Sri Avinashilingam Education Trust Institutions

will preside

venue : Shramik Vidyapeeth, Alagesan Road, Coimbatore - 43

APPENDIX BA NEW TEST OF CREATIVITY

By

ROMAPAL (1986)

The present test has been standardized and can be administered on all group of sample since creativity is not limited to a particular age. The test can be administered both individually as well as in group.

PART - 1 FLUENCY(i) Associational Fluency

1. Write the names of round things that you can think.
2. Mention the names of such Birds and Animals that are white in colour.
3. Write the names of such vehicles that run by petrol.
4. Mention the names of those things that produce sound.
5. Mention as many things you can think, which are square in shape.
6. Write the names of such flowers that have natural fragrance
7. Write the names of drinking things that are fluid in nature.
- 8..Write the names of such that function through electricity.

(ii) Expressional Fluency:

1. Write such towards that start with the alphasets 'A'
2. Write the meanings of idioms in short; one flower makes no garland.
3. All's well that end well
4. Do evil and look for like.

(iii) Word Fluency:

Write the words that start with the following
alphasets

1. A
2. B
3. C
4. D
5. K
6. M
7. P
8. I
9. N
10. R

(iv) Ideational Fluency

1. If an individual is isolated from the society then what will be its results?
2. What would have happened if men had four hands instead of two?

3. If you have the ability and facility of carrying out a business, then what will be your efforts for attaining more profit from it?
4. If you become a MLA or MP then what will you intend to do?
5. Several feelings occur on account of seeing a beautiful flower. What will be your feelings?
6. What would happen if men never experienced tiredness?

(v) Educational Fluency:

1. What are the objects that are one foot long?
2. Name the domestic animals?

PART II FLEXIBILITY

(i) Spontaneous Flexibility:

1. Knife is used to cut vegetables at home. Besides this what are its other uses?
2. Clothes get a new form through colour. What can be the other uses of colour?
3. It has been read in newspapers and the elders also say that Television is very useful for us. In your views what can be the its uses?
4. Paper is used for reading and writing. What else can be the uses of paper?

5. What can be the various uses of newspaper?
6. What can be the uses of tyre and tubes?
7. A carpenter makes tables and chairs. Besides this, what else can he make?
8. Whether it is village or city, purse is used everywhere by everybody. In your opinion what can be the other uses of purse?

(ii) Adaptive Flexibility:

1. At night when you are sleeping, a thief comes in your house. What will you do in such situation?
2. You are passing through a narrow lane when suddenly you face a wicked man. What will you do in such a situation?
3. Suppose in your working place which is far from your house, malice evokes. In such situation what will be your activities?
4. Suppose you are cleaning the house and suddenly something falls from the roof. On seeing it carefully you come to know that it is a black snake. What will be your activities in such a situation?
5. Suppose a child misses his parents at an unknown place. What will he do in such situation?

6. Suppose you are working in a firm and suddenly you are turned out from it. You are in need of money for your family. What type of activities you will do in such situation?

(iii) Innovative Flexibility

Innovation is new construction of pattern in a novel manner.

1. Block building
2. Creative work- formation of new design

PART - II ORIGINALITY

1. If degrees can be attained without any effort then what will be the nature of education?
 2. It is said that whatever man does, he does for his bread. What will happen if men never feel hungry?
 3. If men become the product of test tube baby then what will be the characteristics in man's nature?
 4. If life is possible in space then what type of life will men lead.
-

APPENDIX C

INTERVIEW SCHEDULE TO ELICIT INITIAL AND FINAL
INFORMATION FROM CHILDREN BEFORE AND AFTER ATTENDING
THE CREATIVITY CENTRE.

I. General information

Name of the Child

Age

Sex Male/Female

School

Class studying

Family Constellation

Family: Joint/Nuclear

S.No.	Name	Age	Sex	Relationship	Marital Status	Edu- ca- tion	Occu- pa- tion	In- come
-------	------	-----	-----	--------------	----------------	---------------	----------------	----------

Songs and Instrumental Music:

1. Do you like music? Yes/No
2. Do you wish to sing songs? Yes/No
3. Do you have the habit of singing? Yes/No

4. What type of songs do you prefer most?

Rhythmic songs

Patriotic songs

Folks songs

Bajans and Devotional songs

Melodious songs

Humorous songs

5. Do you practice singing? Yes/No

6. Do your parents, teachers encourage your music interest?

Yes/No

7. How many songs do you know at present?

More than 10 songs

7 - 9 songs

4 - 6 songs

1 - 3 songs

Don't know any song completely

8. What is the frequency of your song practice?

9. Are you aware of various musical instruments? Yes/No

10. Do you like to play them? Yes/No

11. What type of musical instruments do you know?

Drum

Violin

Jalra

Rattlers

Miruthangam

Gitar

Piano

Flute

12. What type of musical instruments do you play?
13. Do you have any such instruments at your home? Yes/No
14. Do you watch T.V. Programmes? Yes/No
15. Do you attend to music programmes? Yes/No

Dance:

18. Do you have interest in dance? Yes/No
19. Do you like to dance? Yes/No
20. Do you have early experience of dancing? Yes/No
21. Have you participated in any cultural activities? Yes/No

Creative activities

22. Do you wish and think to create something new of your own? Yes/No
23. Do you parents and teachers encourage you to create something new? Yes/No
24. Are you exposed to opportunity to sharpen your creative thought and skill?
25. What type of creative activity do you prefer most?

Drawing	Scrapbook making
Painting	Clay work
Colagework	Modeling
Printing	Paperwork
Wood work	Marbling

29. How often do you like to get indulged in creative activities?

Often

Weekly

Rarely

Daily

Whenever feel like

30. What type of creative play material are you aware of?

Reading habits

31. At which age did you start reading books?

32. Do you visit libraries? Yes/No

33. Do you read newspapers? Yes/No

34. Are you provided with books at home?

35. What types of books do you read?

5. If Yes, list the changes.

- 1.
- 2.
- 3.
- 4.
- 5.

6. In what activities is your child more interested?

7. What activities did he enjoy most and least?

8. Do you think that creativity centre inculcate and develop the following in children. Give your view point.

S.No.	Objective	Level of achievement		
		Fully	Partially	Not at all
1.	Discipline			
2.	Self confidence			
3.	Co-operative attitude			
4.	Scientific outlook			
5.	Scientific knowledge			
6.	Character			
7.	Health			
8.	Using leisure time properly			
9.	Scoail contacts			
10.	Sharing responsibilities			
11.	Independent attitude			

9. Are you satisfied with your child's performance after attending creativity centre?

APPENDIX ESTATISTICAL APPRAISALS

Test used: 't' test

- Independent 't' test
- paired 't' test (for comparison)

FORMULAS USEDIndependent 't' test

$$\text{Mean Difference} = | \bar{X}_1 - \bar{X}_2 |$$

$$St_D = \sqrt{\frac{(n_1 s_1^2 + n_2 s_2^2)}{(n_1 + n_2 - 2)} \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$$

$$t = \frac{\text{Mean Difference}}{SE_D}$$

Where,

s_1 = Standard Deviation of first sample

s_2 = Standard Deviation of Second sample

n_1, n_2 are number of observation in first and second sample

Minimum 't' value for significance ($d_f = 29$)

at 5% = 2.048

at 1% = 2.763

For example :

To compare the creativity scores of children attending creativity centre before and after and between not attending children, the following steps are followed.

Attending Children (before)		Not-attending Children (before)
N	= 15	15
$\sum X$	= 680	678
$\sum X^2$	= 31320	31072
SS	= 493.3333	426.40
Mean	= 45.3333	45.200
SD	= 5.7349	5.3317

$$\text{Mean Diff.} = 0.1333$$

$$\text{Std.} = 2.0928$$

$$t = 0.064 \text{ (Not significant)}$$

Attending (After)		Not-attending(After)
N	= 15	15
$\sum X$	= 1046	683
$\sum X^2$	= 72988	31537
SS	= 46.9333	437.7333
Mean	= 69.7333	45.5333
SD	= 1.7689	5.4021

$$\text{Mean Diff} = 24.20$$

$$SE_D = 1.5192$$

$$t = 15.930 ** \text{ (Significant P =0.011\text{\textcircled{a}}level)}$$

Paired "t" Test

$$\text{Mean difference} = \bar{d} = \frac{\sum d}{n}$$

$$SD = \frac{\sum d^2 - \frac{(\sum d)^2}{N}}{n-1}$$

$$SE = SD / n$$

$$t = \frac{\bar{d}}{SE}$$

Minimum 't' value for significance ($d_f = 14$)

at 5% = 2.145

at 1% = 2.977

For example

Attending Children	Not attending children
N = 15	15
$\sum d$ = 366	5
$\sum d^2$ = 9266	15.0
SS = 335.6	13.3333
Mean = 24.40	0.3333
SD _(n) = 4.7300	0.9428
S.E. = 1.2642	0.2520
t = 19.301**	1.323 ^{NS}
(Significant at P = 0.01 level)	(Not significant)

Comparison of attending children vs. Not attending children (regarding their gains).

Mean Difference = 24.0667

SE_D = 1.2890

t = 18.670**

(Significant at $P=0.01$ level)

SCORES OF COMPONENTS OF CREATIVITY FOR CHILDREN ATTENDING CREATIVITY CENTRE

S.No.	Fluency		Flexibility		Originality		Total	
	Initial 75	Final 75	Initial 40	Final 40	Initial 10	Final 10	Initial .125	Final 125
1.	45	70	15	38	2	8	62	116
2.	40	69	12	35	1	6	53	110
3.	54	72	20	39	3	9	77	120
4.	44	70	14	40	2	8	60	118
5.	41	70	11	39	2	8	54	117
6.	42	68	10	38	1	7	53	113
7.	46	69	20	35	3	8	69	112
8.	39	71	14	38	2	8	55	117
9.	50	70	20	37	2	8	72	115
10.	45	70	14	39	2	9	61	118
11.	40	68	16	38	3	8	59	114
12.	56	72	22	38	3	9	81	119
13.	40	65	12	35	1	6	53	106
14.	56	72	23	36	3	8	82	116
15.	42	70	13	38	2	8	57	116

SCORES OF COMPONENTS OF CREATIVITY FOR CHILDREN NOT ATTENDING CREATIVITY CENTRE

S.No.	Fluency		Flexibility		Originality		Total	
	Initial 75	Final 75	Initial 40	Final 40	Initial 10	Final 10	Initial 125	Final 125
1.	45	46	16	17	2	2	63	65
2.	41	41	12	12	1	2	54	55
3.	51	52	20	20	2	2	73	74
4.	44	45	15	16	3	3	62	64
5.	40	40	11	12	1	1	53	54
6.	40	40	10	10	2	2	52	52
7.	47	46	21	21	1	2	89	89
8.	41	40	15	16	3	3	89	59
9.	52	50	18	19	2	2	72	71
10.	44	45	16	17	2	2	62	64
11.	40	40	17	17	2	3	59	60
12.	55	55	17	17	1	1	73	73
13.	40	40	19	20	2	2	61	62
14.	55	55	15	16	2	2	72	73
15.	43	43	13	13	3	3	59	59