

## CHAPTER VII

## SUMMARY AND CONCLUSIONS

7.0.0 Introduction

'The coming age of space is a force contributing to the upsurge in interest in creativity. It stirs imagination and it calls for readjustment at an accelerated rate. Many of the adjustments that we are forced to make are to the accelerated technological advances, but many are also due to the social implications of those advances. In a world grown small so far as travel and communication are concerned and a world in which the exploding population competes ever more strongly for its resources, adjustments in the political and personal-relations areas call increasingly for imaginative solution. From any aspect from which we may view the scene, the needs for creativity are enormous.'

- Guilford, 1959.

It has been increasingly realised that the need for creativity component in education is a must in Indian educational system. Individual researchers and institutions like the NCERT are giving importance to this field of research. The review of related literature in India and abroad as presented in chapter II, indicates that the number and types of creativity fostering researches are woefully small in India. A survey of the situation in classrooms will bring out the point that it is all the more important to conduct such studies.

The system of education in this country has put overemphasis on examinations; parents stressing the marks, grades and distinctions of their children; lack of facilities to conduct experiments, do library study; unchallenging facts of the textbooks being presented in the classrooms, emphasis on conformity in the school climate in particular and society in general; the unusual answers being dubbed as silly or crazy, etc. These have gone a long way in stifling and smothering the creative spark in children.

To understand the nature of classrooms of today and the puzzling problem of fostering children's creativity, the attempts at defining creativity and work done in the field are to be considered.

After a survey of some important definitions of creativity and the approaches to creativity research, Passi's definition (1971) was accepted by the investigator as the operational definition in this respect :

'Creativity is a multi-dimensional (verbal and non-verbal) attribute differentially distributed among people and includes chiefly the factors of seeing problems, fluency, flexibility, originality, inquisitiveness and persistency. It may be pointed out at this stage that creative thinking is accepted to be marked by action of mind purposefully directed to manipulate the environment with a view to create new ideas and establish novel patterns and relationships.'

Educational researchers in India are slowly making a beginning in the field of creativity even though plenty of studies have already been conducted in foreign countries.

Of late, the interest has been increasing and many researchers are devising new instructional methods and materials to enhance the creative abilities of children. Nirpharake (1977) was the first to take up such a study, followed by Pillay (1978) and Deshmukh (1977) at the Ph.D. level. Some stray efforts in the area and the NCERT projects have been carried out, but creativity fostering research is yet to take root in Indian soil. Most of the researchers and organisations have made use of foreign know-how and adopted them to Indian conditions. The studies which take into consideration the culture and ethos of the land are yet to be undertaken. The present investigator has made one such effort<sup>of</sup> devising a new 'scheme of activities' suitable to Kannada speaking children, keeping in view the culture, ethos and other considerations with respect to Karnataka.

#### 7.0.1 The Problem

The problem of the present investigation reads as 'A Study of the Effectiveness of Verbal Creativity Instructional materials at School State.' Taking into consideration, the variables of the study, the problem may be elaborated as 'a study of the effectiveness of verbal creativity instructional materials on male and female students of different creative potentials with regard to different

socio-economic statuses coming from rural and urban back-grounds.'

#### 7.1.0 Objectives of the Study

1. To assess the creativity of students of standard VI in the Bangalore district of Karnataka.
2. To prepare the verbal creativity instructional materials for enhancing creative abilities of VI standard children.
3. To determine the effectiveness of verbal creativity instructional materials on variables, viz., different creative potentials, levels of socio-economic status, sex and rural-urban backgrounds and their interactions.

#### 7.1.1 Hypotheses

There will be no significant differences in the effect of verbal creativity instructional materials on the students of -

- (1) different creative potentials,
- (2) different socio-economic statuses
- (3) rural and urban backgrounds,
- (4) male and female sex.

The effect of verbal creativity instructional materials will not be significant on the students of -

- (5) different creative potentials with regard to their socio-economic statuses,
- (6) different creative potentials with regard to their rural-urban backgrounds,

- (7) male and female sex with regard to their different creative potentials,
- (8) different socio-economic statuses having rural-urban backgrounds,
- (9) male and female sex belonging to different socio-economic statuses,
- (10) male and female sex of rural-urban backgrounds.

#### 7.2.0 Methodology

The methodology followed for realising the three objectives of the study stated above have been presented below objectivewise :

7.2.1 In order to realise objective 1, i.e., to assess the creativity of students of standard VI, no suitable instrument in Kannada developed for that grade was available. Therefore, Passi tests of Creativity (Verbal) developed and standardized in Hindi and English for IX, X and XI standards at Punjab, Haryana and Union Territory of Chandigarh, were translated into Kannada. As the grade level was to be reduced, time duration per test was increased. Norms were developed using 570 children's test papers, residing in and around Bangalore, where the experiments were to take place. The tests were found to be dependent and reliable for the said samples. The same tests were used in pre-test and post-test of both pilot study and validation study. In the final experiment, i.e., the

validation study the pre-test scores on the Passi tests of Creativity (Verbal) represented the creativity of standard VI children ( Vide section 4.2.3 ).

7.2.2 The second objective was realised through the formative evaluation. The formative evaluation was used by the investigator to improve the instructional materials, so that the instructional materials become more functional and meaningful. The formative evaluation, in all probability started right at the stage of development of instructional material, when the investigator was examining the structure and details of the instructional materials. In fact, the development of norms for the Passi tests of Creativity, discussed w.r. to objective 1 could also be considered under formative evaluation. The different steps of formative evaluation taken recourse to in the present study have been described in the sections (a, b, c, d) to follow.

7.2.2.1 (a) The verbal creativity instructional materials developed had the following characteristics :

Eight adventurous ( fantasy and other types of stories were written specially suited to VI standard children. Eight components, puzzles, riddles, etc., whose items were selected by judges, were introduced at strategic points in the stories to enhance the curiosity and motivation of children to know what happened next in the stories. An introductory chapter

was also introduced in the beginning. Two characters, Manju and Kamali, VI and V standard children respectively participated creatively in all the stories, to serve as the identification models. Folk tales, poems, riddles, etc., were used to make the instructional materials culture-specific. (Vide 4.1.1)

7.2.2.2 (b) The typed Kannada version of the instructional materials was submitted to 10 judges to find out the Content validity. The suggestions given by them on a reaction questionnaire were consolidated and suitable ones were incorporated.

7.2.2.3 (c) Three VI standard children went through the entire instructional material and underlined the difficult words and phrases. The underlined words and phrases were replaced by simple ones.

7.2.2.4 (d) A pilot study was conducted in which the cyclostybed instructional materials, with sufficient space for responding, were given to VI standard children of an urban school ( N = 51 ) and a rural school ( N = 36 ). The duration of the pilot study was one and a half months, with a period per day in both the schools. The children responded individually in a creative climate. They were tested on the Passi tests of Creativity (Verbal), before and after the

administration of the instructional materials. The students significantly improved ( $P < .01$ ) in terms of creativity scores from pre-test to post-test. The teachers' ratings of children on a 'Creativity rating scale' also improved significantly after the treatment ( $P < .01$ ). These evidences indicated the workability of the creativity instructional materials. The students gave their suggestions on the reaction questionnaire supplied to them. Most of the children had liked the stories and the components. The more difficult puzzles, mystery plots, etc., were removed and other suitable changes were made in the instructional materials. Now the final version of verbal creativity instructional materials was ready for the realisation of third objective (Vide sections 4.3.0 to 4.3.8 ).

### 7.3.0 Validation Study

In order to realise the third objective of the study, the summative evaluation of the verbal creativity instructional materials was done through validation study. The summative evaluation helps in knowing the overall workability of the instructional materials. The details of summative evaluation have been given under various heads to follow.

#### 7.3.1 Design

A pre-test, post-test parallel group design was used to find the effectiveness of verbal creativity instructional

materials, which has been schematically presented here. 'R' represents the mean creativity score of the group.

<u>Type of School</u>	<u>Pre-test</u>	<u>Post-test</u>
Urban - Experimental	$R_1$	$R_2$
Control	$R_3$	$R_4$
Rural - Experimental	$R_1^1$	$R_2^1$
Control	$R_3^1$	$R_4^1$

The differences, viz.  $(R_2 - R_1) - (R_4 - R_3)$  and  $(R_2^1 - R_1^1) - (R_4^1 - R_3^1)$  represent the effectiveness of verbal creativity instructional materials in terms of the creativity scores.

### 7.3.2 Sample

The achievement in standard V final examination was collected from 10 schools in urban area and 10 schools in rural area. The mean and standard deviation were worked out separately for urban and rural schools. Two schools around the mean in each area, were selected for experiment. By the toss of a coin, a school was selected for experimentation. The schools so selected were M.E.S. Higher Primary School in urban area and Government Model Primary School, Kaggalipura. The remaining schools were, Vijaya Middle School in urban area and Government Model Primary School, Byramangala, which served as the control schools. As randomisation was not

possible, the whole classes were taken up for experimentation.

### 7.3.3 Tools Used

(i) **Passi tests of Creativity** : The Passi tests of Creativity, viz., Seeing Problems Test, Unusual Uses Test, Consequences Test and Test of Inquisitiveness were used to measure the creative thinking abilities of standard VI children during the pre-test as well as the post-test. The 3rd and 1st quartile points were used as the cutting points for deciding the levels of creativity, viz., high, middle and low.

(ii) **Socio-economic Status Scale** : The socio-economic status scale common for urban and rural areas developed by Aaron, et al (1969) was used to find out the socio-economic statuses of children. The high, middle and low SES groups were divided as per the cutting points provided in the manual.

(iii) **Comprehension Test** : The Comprehension test developed by Dave, et al (1974) for VI standard children in Kannada was used to measure the comprehension ability of VI standard children.

(iv) **Reaction Questionnaire** : A reaction questionnaire with sub-parts for each chapter was used to collect the opinions of children on likeability of stories and corresponding components.

(v) Creativity Rating Scale : A creativity rating scale on the lines of Foster (1971) was used by teachers to rate the children before and after the administration of verbal creativity instructional materials. The rating was done from 1 to 5, i.e., from lowest to highest on each one of the factors, viz., fluency, flexibility, originality, inquisitiveness and elaboration.

(vi) Interview Schedules : Two interview schedules, one for high and low gainers, in creativity test, and the other for their parents, were used to collect the opinions.

#### 7.3.4 Pre-Test

One section in each of the four schools was administered the Passi tests of Creativity. The rural and urban experimental students were also administered the socio-economic status scale and comprehension test. In both the urban and rural experimental schools, the teachers observed the children and rated them on the creativity rating scales.

#### 7.3.5 Treatment

The verbal creativity instructional materials were administered in experimental schools, taking due care to provide creativity climate in the classes. The students solved the puzzles, riddles, etc., and wrote the stories,

poems, etc., on their own and each one was suitably reinforced. Individual attention was given, and each student was supplied with copies of the instructional material with sufficient space to respond. The students filled parts of the reaction question<sup>nair.e.</sup> after they finished two chapters. The treatment lasted for 13 weeks and it was spread over 40 periods in each of the experimental schools. (Vide section 4.4.4.4)

#### 7.3.6 Post-Test

The same students were post-tested on the Passi tests of Creativity in all the four schools. The teachers in the experimental schools observed the students and rated them on the creativity rating scale again.

The answer scripts were scored by the investigator to find the high gainers and low gainers in the urban and rural experimental schools. 12 of them, 3 from each group, were interviewed. Their parents were also contacted and interviewed.

#### 7.3.7 Analysis

For the purpose of analysis of data, both the quantitative and qualitative procedures were used. After scoring the answer booklets of students, the distributions of the pre-test creativity scores and the post-test creativity scores were studied. The distribution of pre-test creativity scores

was found to be non-normal. Therefore, both the parametric and non-parametric tests were used to test the hypotheses. (Vide section 5.1.1 ).

't' tests for correlated means and 't' tests for independent means along with their non-parametric equivalents, viz., Wilcoxon test and Mann-Whitney test were used to find the significance of difference between means of various groups (Vide 5.1.2 to 5.1.2.10).

't' test for correlated means and Wilcoxon test were used to find the significance of difference between post-rating mean and pre-rating means in both the schools and together also (Vide 5.3.0).

Analysis of Covariance was used to adjust the effect of pre-test scores wherever necessary.

Pearson Product Moment Coefficient of Correlation was computed to find the correlation between comprehension test and pre-test creativity scores (Vide section 5.2.0).

The reaction questionnaire data and interview data were qualitatively analysed. (Vide section 5.4.0 to section 5.6.1).

#### 7.4.0 Conclusions

As a result of formative evaluation, and from analysis and interpretation of data regarding summative evaluation,

it becomes clear that the verbal creativity instructional materials were able to significantly improve the creative thinking abilities of middle and low creative potential students, high and middle SES students, boys and girls, and students from rural and urban areas. It was also found that verbal creativity instructional materials were based more on abilities than on socio-economic statuses.

The urban students excelled rural students and boys excelled the girls in significant gains, benefitting as it seems by working on verbal creativity instructional materials.

There was significant improvement in case of urban experimental group over the urban control group, but the improvement of rural experimental group over control group was not significant at 0.05 level.

The rating got by the students by their teachers after the treatment, was significantly higher, indicating the behavioural changes in students, which, the investigator may venture to put as perceivable and substantial changes.

The correlation coefficient between comprehension and pre-test creativity being low, it seems that comprehension did not affect much the fostering of creative abilities, i.e., the increase in creativity scores.

Majority of the children had liked the stories and the components, indicating the satisfactory approach used in the

verbal creativity instructional materials.

The high gainers differed from the low gainers in important creativity characteristics, as revealed by the students in the interviews with them.

#### 7.5.0 Suggestions for Further Research

Any research opens up new vistas and new areas of research most probably more than it answers. A few suggestions which are very important for further research have been given here.

- (i) The effectiveness of each one of the components could be separately investigated.
- (ii) The same instructional materials could be used with school children of various backgrounds as part of their curricular activities.
- (iii) The same instructional materials could be tried out with different climates, like, permissive Vs restrictive, etc.
- (iv) The same instructional materials could be tried out as self-instructional materials without the teacher variable.
- (v) The effect of creative problem solving activities and activities of creative expression could be found out separately.
- (vi) A sample of the experimental children could be tested after the gap of one year and the retention effect could be found out.

- (vii) The changes in attitude and values as a result of these instructional materials could be found out.
  - (viii) Personality traits of children Vis-a-Vis the gains in creativity scores due to verbal creativity instructional materials could be studied.
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