Chapter VII

SUMMARY AND CONCLUSIONS
# INDEX OF THE SEVENTH CHAPTER (234-250)

## 7.1 Summary
- Statement of the research problem 234
- Research Hypothesis 239
- Null Hypothesis 239
- Objectives of the problem 240
- Definitions of the terms used 241
- Scope and Limitations of the Present Study 242
- Review of related literature 242
- Experimental Design 242
- Tool 242
- The Verbal Package 243
  - Training 244
  - Data Collection 244
  - Data Analysis 245

## 7.2 Conclusions 246

## 7.3 a Relevance of the Present Study regarding the curriculum 247
b Relevance of the study for the College of Education 248
c Relevance of the Present Study for parents 248

## 7.4 Educational Implications of the Present Study 249

## 7.5 Suggestions for further research 250
CHAPTER VII

SUMMARY AND CONCLUSIONS

7.1 Summary

Creativity is a many splendoured thing. Creativity means different things to different people. According to Piaget\(^1\), thinking is a creative process initiated by the organism and not a simple response to a stimulus. This definition confirms the fact that creativity exists in every human being. Piaget further states that individual child structures its experience and during the later stages of child development he or she can exhibit greater amount of creative thinking.

The space age is taking us places where old and comfortable ideas no longer apply. Much will be required of the creative potential of today’s school children. “We know not what man will become” But there is no evidence that human evolution is drawing to its close. Evolution of this Creative Man will require changes in education. Changes as radical as the technological shifts, changes that require boldness, imagination and hard work. Wishing will not bring them about. There is a need for training. Even Radhakrishnan Commission and Kothari Commission have emphasised this aspect of education. In fact while outlining the frame work of liberal education, Radhakrishnan Commission has emphasised this creative aspect. According to the report, liberal education is the preparation of the student for independent thinking for critical enquiry and appraisal and for creative and constructive thought and action.
If the changed objectives mean anything, many new development in the area of teaching methods in curriculum, in instructional material, in identifying talent and in evaluation in achievement are needed. The quantity and quality of ideas produced by children can be improved by teaching them divergent thinking and providing suitable activities to develop it.

The nurturing of creativity becomes a pivot around which the school activities should be woven. Teacher student relationship is a very structural relationship where this creative spirit can have more scope to bloom.

The training of the children can be started at the preschool level. Progressive nursery schools can give them enrichment of environmental stimulations which will lead to greater intellectual competence and creativity. Thus the same central idea can be used in the upper levels of education. Thus, making the child more independent, unconventional and flexible.

When we take a bird’s eye view of the educational climate of the country, do we observe these aspects? Thus another question is raised, “Is education biased against creativity?” The school which functions as an Institution where culture and social norms are transmitted, may become a barrier to creativity. The present curriculum is unable to provide enough scope for the creative spirit among students. Thus, the foundation itself is shaking. So the need of the hour is that whoever is connected with the system called education, should come forward and do one’s bit.
The same subjects can be taught in a novel way. Also there is a
great scope for training unrelated to the normal school subjects.

To enhance children’s creative abilities special educational
experiences can be arranged where they would learn and imbibe
in them the spirit of creativity.

According to Marrow, adolescence is the period which is very
beneficial for giving training in creativity. Marrow feels that this
period is the time for learning new things. The children are
curious, they are prepared to solve problems and are able to relate
diverse elements. According to Liam Hundson, “The conscious
nurture of children’s creative potentialities may still be worthwhile
operation, but not because it produces more and better brain
workers. It may be worthwhile because quite simply it makes
school a more enjoyable place to be”.

According to Flemming, “During a teacher’s professional training
the psychological, philosophical and sociological bases of
education are examined in detail and links are made between these
and practice in school”.

If the teacher can provide children learning experiences which are
varied and serve as an impetus to be creative, the process of
education can be very stimulating. Creative development can be
enhanced through these experiences. A most important factor in
encouraging children to use their creative abilities is that the
teacher should really believe that all pupils are capable of
achieving a high level of creative functioning.
The work of Torrance has become something of a classic in this field. His theme is concerned with the guidance of creative talent. The following ideas are suggested by him for encouraging creativity in children in school.

1. Encourage unusual questions
2. Reward creative effort in the form of unusual and imaginative ideas.
3. Show the pupils that you value their ideas.
4. Allow some activities to develop without evaluation.
5. Avoid setting tasks on the basis of ‘boys do this and boys do that.’
6. Encourage experimentation, spontaneity and the utilisation of errors for further learning.

From above suggestions one can conclude that school experiences should involve the children more positively in the whole process of education in questioning, listening, discussing, thinking and being actively involved in practical working.

The term ‘self actualisation’ is used extensively by Maslow. He distinguishes between “special talent creativeness” and self actualising creativeness. The former he associates with standard and conventionally accepted areas of creative endeavour such as poems, novels, theories, experiments and paintings. The latter he sees springing more directly from the personality and showing itself in attempts to do anything creatively. If one can say so the latter half falls in the area of divergent production.
According to Guildford, “Creativity is not a special gift of the "select few? It is indeed a property shared by all humanity to a greater or lesser degree.”

If a teacher accepts this view, the implication is surely that the children should have the opportunity to realise their creative ability to its fullest potential. One way of achieving this goal is to impart the subject knowledge in an unusual way. The approach should be flexible so that the children are exposed to divergent thinking.

After discussing various facets of creativity, a question arises in mind 1. "How far is modern education justified to creativity". 2. "How far is every learner in school for example allowed to nourish and exercise his/her potentiality"?. A birds eyview of what is going on in the name of school education in modern school in the country presents us with a dismal picture. Every learner is burdened with a heavy school bag. Education today itself endears to routinised activities that are eager to bring the undesirable patterns of observance of discipline and as much imitation has taken a upper hand in creativity and education. According to John Dewey, "If Creativity and Education are to be properly harmonised, then the role of imitation is to be clearly and specifically spelled out.

To do justice to creativity in a child has its diverse avenues of manifestation, always thrilling, always pulsating. The education of the child necessities the exploring of these diverse avenues to allow every child to be alert and active in creative endeavour.
Education and Creativity must synchronise. The school child should enjoy a healthy academic atmosphere where she or he can ventilate the creative talent. The class routines should be so oriented that they provide children with some scope for excercise of their creative talents in the best possible manner. The aural - oral skills for linguistic and literacy development should be fostered through various channels of Creativity, Organization of school functions and festivals can also turn but to be an excercise in creativity. The teacher can synchronise aesthetics and creativity among school children by means of intoducing different co-curricular activites. They can also impart training to students, which was the focal point in the present study.

**Statement of the research problem**

Development of a training package for enhancement of verbal creativity of IX std, Marathi medium students.

**Research Hypothesis**

The training is effective in terms of significant increase in the score of creativity test.

**Null Hypothesis**

To test the objectives statistically it was thought desirable to form statistical hypothesis in null form viz.,

1. There is no significant difference between the mean
scores on the creativity and the scores after the training.

2. There is no significant difference between the mean scores of the student from control and experimental groups.

3. There is no significant difference between the gain in the mean scores of the student from the control and the experimental groups on the test of creativity.

**Objectives of the problem**

i. To prepare a training package

ii. To construct the items of the package to test the ability of convergent and divergent production in semantic context areas.

iii. To test the effectiveness of the package.

iv. The package will include ten abilities namely
   - Cognition of semantic transformation (CMT)
   - Convergent production of semantic transformation (NMT)
   - Convergent production of semantic units (CMU)
   - Divergent production of semantic classes (DMC)
   - Divergent production of semantic systems (DMS)
   - Divergent production of semantic units (DMU)
   - Divergent production of semantic relations (DMR)
   - Divergent production of semantic implications (DMI)
   - Divergent production of semantic transformations (DMT)
   - Divergent production of symbolic units (DSU)
Definitions of the terms used

A verbal package - A learning package is a very practical and successful tool for individualised instruction. It contains following features

1. A general idea stating what is to be studied
2. Specific skills to be achieved
3. Enrichment activities
4. A series of three tests - A test of prior knowledge, a self test and a mastery test to determine the students level of competence after completion of the package.

Creativity - Creativity means different things to different people. Various eminent psychologists have defined it in various ways.

According to the researcher it is a score on the creativity test. It is also an ability of the individual to find out new meanings, connections into existing system. It is an inherent and also a cultivated activity. It is an ability based on the past experiences of the individual. It is like a magic wand. If one has it in oneself or experiences it at a particular moment, it is expressed in the form of a product. It is a purposeful and well directed activity although the product may not be absolutely complete or perfect. It can assume an artistic literary or scientific form. The activity of creating something is very satisfying to the individual and the process of thinking becomes very flexible.
Scope and Limitations of the study

The training programme was conducted in the field of verbal creativity. The programme was for IX std students in Marathi medium schools in Pune city.

Review of related literature

It was necessary to review the related literature in the field of verbal creativity and training thereof. Since the review enabled the researcher to obtain an insight into the nature of verbal creativity. It also threw light in various training systems and their effectiveness which guided the researcher in designing the training package as well as in conducting training classes with a view to build the student rapport and increase the efficiency of the programme.

Experimental Design

Selection of an experimental design depends on the information which the investigator wants to explore with respect to a particular study. To test the effectiveness of the verbal creativity package, a true experimental design was selected viz., "The Soloman Four Group Design". It is an attempt to eliminate the possible effects of familiarity with the pre-test. Each of the four groups as per the Soloman Design had fifty students. The sample was large sample.
**Soloman Design - A Graphic Representation**

<table>
<thead>
<tr>
<th></th>
<th>treatment</th>
<th>$Y_a$ (experimental)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$Y_b$</td>
<td>No treatment</td>
<td>$Y_a$ (Control 1)</td>
</tr>
<tr>
<td>---</td>
<td>treatment</td>
<td>$Y_a$ (Control 2)</td>
</tr>
<tr>
<td>---</td>
<td>No treatment</td>
<td>$Y_a$ (Control 3)</td>
</tr>
</tbody>
</table>

$Y_b =$ Scores before the treatment  
$Y_a =$ Scores after the treatment

**Tools**

Using an appropriate tool is an important part of the research. Following tools were used in the present research.

1) A test in literary creativity, designed by Dr. M. B. Kundale.
2) A verbal package made by the researcher based on Guilford’s S. I model.

The test is constructed in the area of creative, imaginative or artistic writing. The reliability of some parts in the test is more than 0.90

**The Verbal Package**

To impart training in verbal creativity the verbal package was prepared on the basis of Guilford’s theory of creativity.

There are various methods and procedures which are as followed to enhance imagination and to nurture creativity. These methods
are called "Techniques" to develop creative thinking. Training is one of the technique, which is being adopted in the present study.

Training

The objective of training is to bring about the desired change in the pupil. The objective is achieved by following various paths. One of the way is to arrange participatory activities and planned instructions carefully. Use of learning packages has been given various names. The research has already established that these learning packages are quite useful in teaching basic concepts of any subject.

As mentioned in the third chapter the theoretical basis behind the construction of the package was the S. I. model theory, put forward by Guilford.

Once the package was made, a pilot study was conducted to determine the stimulus potential of each item in the package.

The package was give a final shape and was used for training.

Data Collection

Various methods are adopted to collect the data. In the present study requisite data was generated and to some extent the interactive method was used.
The core part of the research programme was carried out in three schools. The pilot study was conducted in Modern High School, Pashan, Pune. The training sessions were conducted in Ahilyadevi Girl's High School, Pune and Abhinav Vidyalaya, Pune.

As per the Soloman's design test in verbal creativity by Dr. M. B. Kundale was administered to various groups as according to the schedule. The response sheets were examined as per the scoring key.

**Data Collection**

Analysis of data depends on the experiment design. In the present research Soloman Design gave sets of mean values of scores on tests of creativity administered to four groups. A summary and analysis of the group mean scores is given in Table 7.1. This table gives a quantitative analysis. What is clearly established from the experiment is that training in creativity is found effective and the Null hypothesis rejected.

Qualitative Hypothesis analysis judges quality of responses to give insight into conclusions drawn in quantitative analysis. Criteria of fluency, flexibility and originality were qualitatively assessed as produced in Table 7.2.

**Return of the Null Hypothesis**

The null hypothesis states that there will be no significant difference between the achievements of the experimental group on creativity pre-test and post-test with respect to component abilities such as fluency, flexibility and originality.
Table 7.1

A. Significance of mean difference on creativity tests under experiment design

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Pre-Test</th>
<th>Treatment Details</th>
<th>Post - Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exp Group</td>
<td>M=147.78 σ=34.05</td>
<td>Training Given</td>
<td>M=197.20 σ=44.67</td>
</tr>
<tr>
<td>Cont. Gr 1</td>
<td>M=148.49 σ=24.65</td>
<td>No Training</td>
<td>M=161.54 σ=40.53</td>
</tr>
<tr>
<td>Cont. Gr 2</td>
<td>-</td>
<td>Training Given</td>
<td>M=186.36 σ=50.78</td>
</tr>
<tr>
<td>Cont. Gr 3</td>
<td>-</td>
<td>No Training</td>
<td>M=149.48 σ=33.43</td>
</tr>
</tbody>
</table>

B. Two-Tailed 't' distribution values for probability percent significance levels

<table>
<thead>
<tr>
<th>P%</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>1.66</td>
</tr>
<tr>
<td>5</td>
<td>1.982</td>
</tr>
<tr>
<td>2</td>
<td>2.362</td>
</tr>
<tr>
<td>1</td>
<td>2.63</td>
</tr>
</tbody>
</table>

Degree of Freedom dF = 98
C. Table of observation when two different groups compared for their means and their 't' scores calculated for significance of difference between their means

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>First Group</th>
<th>Second Group</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name</td>
<td>Test Familiarity</td>
<td>Training</td>
</tr>
<tr>
<td>1</td>
<td>Exp. Group</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>Control Group 1</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Control Group 1</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>4</td>
<td>Control Group 2</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 7.2

<table>
<thead>
<tr>
<th>Component Ability</th>
<th>Test Means</th>
<th>Observed Difference in means</th>
<th>Mean Difference at 1% confidence level</th>
<th>Is difference Significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flexibility</td>
<td>60.66</td>
<td>94.58</td>
<td>33.92</td>
<td>13.9</td>
</tr>
<tr>
<td>Fluency</td>
<td>97.46</td>
<td>144.24</td>
<td>46.78</td>
<td>11.43</td>
</tr>
<tr>
<td>Originality</td>
<td>29.22</td>
<td>30.92</td>
<td>1.79</td>
<td>3.52 (2.47 at 10% level)</td>
</tr>
</tbody>
</table>
The null hypothesis is rejected for fluency and flexibility. For originality it is accepted. The possible reasons being.

i) Originality is a rare attribute gifted to very few by the Almighty alone.

ii) Possibly the existing education process does not allow for an open and immediate response by pupils to "Show off" the original mind.

iii) Since the originality is generally repressed in the minds of the student right from the formative years at home, outside by the society and in academics by the rigid curriculum and the system of examinations, it would perhaps have surfaced after considerable passage of time and pursuasive training over long durations.

The training programme was well received by the students. Though the students thought that it was a novel experience, they actively participated in the programme.

7.2 Conclusions

1) The verbal package was prepared and was proved satisfactory.

2) Items were constructed to test the abilities of convergent and divergent production. The content was semantic.
3) The package included ten abilities namely:
   - Cognition of Semantic Transformation [CMT]
   - Convergent production of Semantic Units [CMU]
   - Convergent production of Semantic Transformation [NMT]
   - Divergent production of Semantic Units [DMU]
   - Divergent production of Semantic Classes [DMC]
   - Divergent production of Semantic Systems [DMS]
   - Divergent production of Semantic Relations [DMR]
   - Divergent production of Semantic Implications [DMI]
   - Divergent production of Semantic Transformation [DMT]
   - Divergent production of Symbolic Units [DSV]

4) The verbal package proved effective in developing creativity along with abilities like fluency, flexibility in the students.

5) There was no marked change in the group mean scores of the ability of originality.

7.3a) **Relevance of the present study regarding the curriculum.**

The word “curriculum” generally means a conglomerate of all school oriented learning experiences of children. Mostly the focal point of most of the curriculum is “Cognitive memory”. But if the creative element is incorporated while framing the curriculum the young minds will be exposed to rich and varied experiences and thought processes. The principles of fluency, flexibility originality should have an adequate place while chalking out the curricula. The children in the middle years of schooling relish pace, they enjoy acquiring skills. They enjoy fineries of the
language. In future even if the curriculum for the subject Marathi undergoes modification and change the present training programme will have a beneficial effect on the enhancement of verbal creativity.

7.3 b **Relevance of the study for the colleges of education.**

The main objective of the college and education is to inculcate and imbibe psychological, sociological and philosophical theories, ideals into the student teacher’s minds during the learning teaching process so that they can put them into practice while teaching the students. The ultimate aim of this exercise is the students welfare. If student teachers are made aware of the concept of creativity, its contribution, impact on the learning behaviour, intellectual and emotional development of the students, they will adopt the techniques to enhance creativity in school life. They can definitely avail of the same verbal package or construct some items for the enhancement of creativity.

7.3 c **Relevance of the present study for parents.**

Now a days most of the parents take a keen interest in all sided development of their progeny. But many of them still stress the importance of the academic development of a child. If they will read the training programme, they will understand the multiple facets of creativity. They will realize the significance and the relevance of divergent thinking and they will have some idea about the principles of fluency, flexibility and originality.
7.4 **Educational Implications of the present Study.**

The main objective to undertake this research project was to realize, to understand and to point out the concept of verbal creativity. Equally important was the second objective i.e. the training programme which should be beneficial to the students. As stated earlier, the study can be of interest to student-teachers, parents, teachers and researchers working in the field of creativity.

The related researches in the field of creativity have established and confirmed that training plays a very positive role in the enhancement of creativity. The present study once again reconfirmed the belief.

Most of the times creativity is dormant, it should emerge on the surface for the benefit of the individual psychologically it will be a very satisfying experience. If creativity potential is not realized, developed and brought to surface, it will be wasted and the individual as well as collective will be a losers. The motto of the present education is development of human resources. The programme of such nature is a definite step towards that goal. If positive and significant results can be sought within such a short time persistence in fostering creativity will definitely add new dimensions to the personality of the children and their overall development.
7.5 **Suggestions for further Research**

The process of studying a problem is a continuous one. While studying the problem, some other facets of the problem emerge out and can show the way for other research studies. Following are some of the topics in the area of training in verbal creativity.

1) To try out the training programme on large and different samples for its generalization.
2) To study the co-relation between the training programme and sex differences.
3) To prepare a training programme in verbal creativity at various levels.
   i) Elementary level.
   ii) Lower middle school level.
   iii) Higher secondary level.
   iv) College level.
   v) Adults.
4) To prepare training programmes for enhancement of verbal and non verbal SI abilities.
5) To study the co-relation between verbal creativity and intelligence and achievement in Marathi.
6) To prepare such a kind of programme in other languages and subjects.
7) To study the effect of training programme on development of interest in Marathi subject.
The researcher feels that even in the computer age the ability to communicate will always remain in the forefront of things and creativity will have its own important pattern in the kaleidoscope of development scenario.

Creativity and man go hand in hand in many ways. Properly practised, creativity and creative thinking hold out immense potential for bettering the quality of life.

It is the researcher's earnest hope that this body of work will serve as another humble contribution to the task of scientifically probing the frontiers of this wonderful fact of human existence.

It can be aptly concluded by offering a small message to all those who follow - this work has only begun. Creativity is yet to witness its final hour, it is for those involved in creating curriculum, in moulding students and in development of human resources to make it happen.

I can only conclude by offering a small message to all those who follow, our work has only begun. Creativity is yet to witness its finest hour and may you be among the ones to make it happen.
1) Piaget

2) Myers

3) Marrow

4) Liam Hudson

5) Fleming
   Cited in "Creativity and Teacher", By J. Foster MacMillan V. K.

6) Torrance E. P.