CHAPTER I

THE PROBLEM AND ITS IMPORTANCE

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References
CHAPTER I
THE PROBLEM AND ITS IMPORTANCE

1.1 Introduction

Creativity is a cluster of abilities. Education is a lifelong process related to so many components. It is also related to the total development of an individual. By the means of education, an individual can develop the art of creativity. All-round development means physical, mental, spiritual and intellectual. Mental development consists of psychological abilities like intelligence, reasoning, thinking, imagination and creativity.

Creativity is a specific faculty of mankind. Creativity provides an opportunity to think freely. Many thinkers and researchers have tried their best to develop the art of creative thinking. For the development of creative thinking everyone must know the ability, the attitude and the environment of the students in which they are growing should help them to develop the natural tendency of creative thinking. The school is the second home for the children. Hence it is necessary to know creativity of the students in relation to their institutional climate. Therefore the researcher has decided to study creativity in relation to institutional climate.

Creativity and intelligence are both mental ability of a person. Creativity is the measure of divergent thinking whereas the intelligence is the measure of convergent thinking. As is obvious, the degree of convergent thinking needed is much higher...
for the IQ problems than for the creativity problems, while the
degree of divergent thinking needed is much higher for tackling
creativity as compared to IQ problems. They represent quite
distinctive sets of abilities and indeed, in a real sense those
who are high IQ scorers are not necessarily creative and vice
versa.

One significance of Getzels and Jackson's work was that
they found teachers preferring the high IQs to high creatives
even when gradewise both had performed equally well. And this,
too, in America in a private highbrow school! The high
creative, with his moodiness, unpredictability, penchant for
humour, his habit of questioning basic premises, and so forth, is
often a menace to the ordinary teacher, while the high IQ child,
bright and eager to please the teacher with his regurgitation of
teacher's ideas, tends to become the teacher's pet. This points
to the monumental tragedy of the educational system the world
over. The tragedy is the emphasis laid on the examination
oriented system of education prevailing particularly in India.

To begin with, we use entrance tests and examinations where
we assess primarily memory and convergent thinking ability. As
teachers we further discourage divergent thinking in the
classroom. No wonder then that those we call our best students
sometimes fail miserably to do anything original or outstanding
in life, and quite commonly the so-called non-achiever excels in
performance in topics of interest to him blossoms out in life.
Newton and Einstein, be it noted, were considered dullards at
school. It is sobering to contemplate the cultural consequences
of thousands of years of wholesale discouragement of creativity
and divergent thinking in our schools and academic institutions.

1.2 Creative Abilities

Creativity is not one ability at all, but a whole cluster of abilities. The following are the most important ones.

(1) The first is called fluency. It measures a person's ability to come up with a number of solutions to a given problem. For example, if we ask a group of persons to list the number of uses of bricks, some might come up with five uses, others with 15 or 20. Those that came up with a large number of uses would be called ideationally fluent persons. Ideationally fluent persons tend to come up with a greater variety of solutions as well as with a larger number of unusual solutions than persons who are ideationally not fluent.

(2) The ability to provide a large variety of solutions to respond to a problem from a variety of viewpoints, and to use a variety of approaches in problem solving is another important ability. It is called flexibility.

In the brick example, one person may list several uses of bricks, but all these uses may be connected with its use as a construction material - build houses,
build bridges, build wells and walls etc. Another person may list a large variety of uses such as bricks as weapons, as stepping stones in mud, as doorsteps, as engraving materials etc.

(3) The third creativity is originality or the ability to come up with unusual but appropriate responses. For bricks, their use as hiding placing for jewellery, or their use as dumb-bells, or their use as substitutes for pillows, by placing them under the matress may be considered unusual, and therefore original responses. A related ability is the ability to come up with relationships between ideas or two frames or reference. This is the sense in which Koestler understands creativity. It is the faculty that helps an Edison leap to the realization that what you need to turn electricity into light is not a good conductor of electricity as his contemporaries thought, but a bad conductor — a new relationship between current impedance and incandescence.

(4) A fourth ability is to notice unexplained, the unsatisfactory, or the incongruent — in other words the ability to sense problems. Scientists often dismiss data inconsistent with their pet theories as "noise". It is the inquisitive scientist, curious about "noise", who sometimes makes remarkable discoveries. Alexander Fleming, the discoverer of penicilin is a case to the point. Many scientists had observed that fungus
forming in a bio-chemical culture inhibits the growth of bacteria. But they failed to grasp the significance of this "noise" in their experiments. It was Fleming who wondered about this and ultimately saw the significance of this for treating infections.

(5) A fifth ability is the ability to go to the roots of a phenomenon by unravelling its causes, and equally, to visualize its consequences. This of course, is a vital ingredient of scientific creativity. But it is also an ingredient in artistic creativity, where the ability to discern the mental associations of an object, and its potential for a metaphor in a work of art may be vital.

The ability to elaborate on a theme has also been recognized as a significant creative ability. An ability to elaborate is undispensable in putting creative idea to work.

An ability of considerable importance is the ability to go behind the surface features of a problem, and see what the "real" problem is. A group of psychologists called gestalt psychologists have held it to be mainly responsible for producing original insights.5

Obviously, the abilities of fluency, flexibility, originality, problem sensitivity, the ability to grasp the causes and visualize the consequences, the ability to elaborate, the ability to restructure problems are not
generally found in equal measures in the same individual. The individual who can imagine fluency may not be original, and vice versa. It is therefore inappropriate to categorize a person as creative or uncreative without specifying the dimensions on which he has high ability and the ones on which he has a more limited ability. The consequences test measures the dimensions of fluency, originality and creativity. (Creativity score is the sum of the scores of fluency and originality.)

1.3 Determinants of creativity

Scholars of creativity have suggested a number of determinants of creative behaviour such as the person's biological constitution and genetic inheritance, his or her personality, the nature of the home with which he is associated, his birth order in the family, the nature of the organization or institution in which he studies, the family background and parents' education, the values and practices of the culture in which he lives, etc.

Creativity is not a school subject at any level. There is not even a lip service given to the subject of creativity. That is why our school is full of bookworms, and they lack conceptual understanding in any subject. They are not prone to divergent thinking which is a precursor to the development of creativity in the pupils. What is needed for creativity development is the formative environment around the children.
(1) **Childhood Home Environment**

It is obvious that a child’s home environment must be a major shaper of abilities and personality traits related to creativity. Rigidity, conventionality and authoritarianism are the depressors of creativity. These are known to be induced by a harsh, discipline oriented, conformist home environment.

On the plus side, a study of Getzels and Jackson suggests that parents who encourage offbeat hobbies, interests and careers and do not over emphasize on academics, tend to stimulate their children's creativity. There is also evidence that children who get special attention such as first born tend to be more creative. Secure, non-conventional "arty" parents tend to have creative children. Parents intensely involved in their children's talent development, who go out of their way to find the best tutors, also tend to have creative children.

Thus, childhood environment is a stronger predictor of child's creativity and self-actualization motives than the school, current social and work environments. Socio Economic Status is one of the research variables in the educational researches. Climate is one of the research variables in the present thesis.
(2) **School Environment**

The development of creativity appears to be enhanced by certain components in the life of the child. These variables are:

(i) an open environment
(ii) the active use of creative skills
(iii) the result of previous knowledge
(iv) a disciplined use of technique and
(v) an association with artists.

An open environment is one where children are encouraged to express their own ideas and emotions and one where they feel psychologically secure. Thus schools having open climate can do a great service in instilling creative ability of the children. That is the reason for incorporating school climate as a variable in this research. The investigator hopes to have a definite effect of this variable upon creativity scores.

(3) **Habitat**

Habitat influences patterns of thinking process and helps build up the attitude towards new problems. Rural life is said to be monotonous as compared with urban life. In urban area, children come across many new and novel things and the process of perception leads to concept building. Thus the urban area is more
given to creativity. While rural area, because of the limited exposure to variety of goods and services available, has a monotonous thinking process. Sometimes, this is also killed because of sameness found in the village atmosphere.

(4) **Society**

Indian society is a caste-ridden. At one end, there is a rich class and at the other end there are numerous masses of poor people living side by side. The classes of elite enjoy all the facilities of life, while the poor people of the masses have to forego a meal. In such an atmosphere, the children of elite classes are exposed to richer and varied atmosphere which impel or enhance the thinking process. While this is not so in poor atmosphere of the rural area. Therefore it is assumed that the children from urban area are superior in creativity to those of rural area.

1.4 **Importance of the problee**

Research on measurement of the creative abilities of students has stimulated widespread interest among educators. There has been a growing concern among educators and researchers over the classroom behaviour of the "creative" child and the effects of certain variables on creativity. According to M.K. Raina the behaviour of highly creative children as identified by scores on creativity
tests differs widely from the behaviour of less creative children.

Sometimes it is heard in the society that poor and backward children do not have creative urge as much as manifested by the non backward class children. It is also heard that pupils of rural and urban areas differ widely in creativity. As also girls seem to be superior to boys in creative works and arts.

Till today, no research with the composite design incorporating caste, area, sex and climate independent/moderator variables has been carried out. Hence the researcher has selected the following topic for his Ph.D. work.

"A comparative study of the creativity of the B.C. and Non B.C. Students of secondary schools of Kaira district in relation to their institutional climate."

The challenges of the present world are legion. They require humanity to think differently. The students will have to learn how to think rather than what to think. Thinking process is an important task in learning, but to develop the process of thinking is difficult. Thinking is a skill and like any other skill, it can be developed and improved upon if one knows two basic types of thinking.

1. Divergent thinking
2. Convergent thinking
Divergent thinking is undoubtedly the distinguishing characteristic of creative thinking. The future of our civilization depends upon the quality of creative thinking and imagination.

Of all individual attributes the creative urge in humans is of importance as well as mysterious. In day-to-day work the students are probably making creative contributions regularly but like any creative individual they may be creating without the knowledge of creative process. This is what the present education system provides mainly in analytical and deductive judical and evaluating thinking.

Development of creativity and concern for it is not only a social reality but also an individual one. Creativity assumes a new urgency at a time when the philosophical horizon is consolidated more closely around man.

According to Funks and Wenells, creative thinking means "The quality of being able to produce original work or idea in any field."

Studies on the importance of man's health, happiness and social situations show that there are certain "effective properties" and not the physical, social and intellectual abilities which are responsible for health and happiness. These "effective properties" stimulate life and in the long run manifest creativity in all human beings. Thus all human
beings to a greater or lesser degree possess the creative ability.

Arastch and Arasich state very clearly that "the degree of awareness of creativity and the quality product may vary from individual to individual but men are related through a common endeavour which manifests itself in creativity."

Thus creativity is not a rare commodity. From the analysis of psychological tests ever made, it is concluded that the creative talent is normally distributed among all because creativity is a field of knowledge which explains common man individually or collectively to reach solutions that are both novel and useful.

The children are born with unlimited imagination. Hence they have ability to create fanciful illustrations up to the age when they enter the educational institutions. Their creative ability is powerful in terms of imagination, ingenuity and curiosity, but as they go through the educational system i.e. from primary to college their creative ability may be influenced by

(A) Internal variables: - the internal conditions viz. intelligence, memory, aptitude and motivational factors

(B) External variables: - external conditions such as home environment, school environment and parents' education as also their socio-economic status.
1.4.1 Definition of Terms

There are certain terms which need explanation.

1) Creativity:

Creativity includes a cluster of many abilities such as fluency, originality, variety of responses, etc.

According to Stein, "A process is creative when it results in a novel work that is accepted as tenable, useful or satisfying by a group at a point in time."\(^{14}\)

According to Israile N., "Creativity is the capacity of constructing and manipulating any new objects."\(^{15}\)

According to J.E. Drevahal, "Creativity is that human ability by which he presents any novel work or ideas."\(^{16}\)

2) Secondary Schools

Secondary school begins with Std.VIII and ends with Std.X. The higher secondary stream is not included in this category.
(3) **Kaira District**

It is one of the districts in the state of Gujarat and is mostly inhabited by the people of different economic strata. Peasant community is formidable in this district. The district is traditionally considered to be a prosperous and highly developed district having an extremely high spirit of educational progress.

(4) **Institutional Climate**

Institutional climate means climate depicted through the interaction between and among the personnels in the institution and those out of the institution specially connected with institution. According to Helpin "Institutional climate means interactions of institution and common currents of feeling. It is the general feel of the organization. Each school has different "personality" depending upon its climate." Some have authoritarian climate while others have open climate. Its impact is considerable on the personality of the pupils.
Caste is a label which is inherited by the individual by his birth. Castes are traditionally classified into main sub-castes like BRAHMIN, KSHATRIYA, VAISHYA and SHAUDRA. Broadly all these castes with regards to their socio-economic status are categorized into two major classes, namely, backward class and non backward class. The Backward Class (B.C.) are provided with special reserved facilities against Non Backward Class (Non B.C.) in attaining education, getting appointments in services and other economic and monitory facilities. These two broad categories of the caste - Backward Class (B.C.) and Non Backward Class (Non B.C.) are taken as levels of caste. The government circulars depicting the caste and sub castes have been taken into consideration.

1.5 **Objectives of the study**

The main objectives of the present study are

(1) To assess the creativity mean scores of the students studying in secondary schools of Kaira district.

(2) To compare the creativity mean scores of B.C. and Non B.C. students of secondary schools of Kaira district.
(3) To compare the creativity mean scores of the students of rural and urban areas.

(4) To compare the creativity mean scores of the boys and girls studying in secondary schools of Kaira district.

(5) To compare the creativity mean scores of the students of different schools having 'open' and 'closed' climates.

1.6 **Identification of Variables**

For the present research, the following independent variables are envisaged.

(i) **Caste**: The two broad categories of the caste are Backward Class (B.C.) and Non Backward Class (Non B.C.) are taken as levels of caste. The government circulars depicting the castes and sub castes have been taken into consideration.

(ii) **Area**: The rural and urban areas are the two broad categories of area. The schools would be selected randomly from cities and villages for the purpose of collecting data.

(iii) **Sex**: The usual categories of sex are boys and girls.
open and closed climate schools on the basis of Institutional Climate Description Statements (ICDS) scores.

1.7 Hypotheses

The following null hypotheses are formulated for the study:

(i) There is no significant difference in the mean scores of creativity of the B.C. and Non B.C. students of secondary schools of Kaira district.

(ii) There is no significant difference in the mean scores of creativity of the rural and urban students of secondary schools of Kaira district.

(iii) There is no significant difference in the mean scores of the boys and girls of the secondary schools of Kaira District.

(iv) There is no significant difference in the mean scores of the students studying in schools having "open" and "closed" climates.

(v) There is no significant interaction between /among the independent variables in the production of creativity scores.
There is no significant difference of mean scores of creativity among the standards i.e VIII, IX and Xth.

1.8 Sample

The sample is drawn from the secondary schools of Kaira district of Gujarat State. A stratified random sampling procedure has been adopted for the study. In order to have representative sample, the schools are listed talukawise and arenwise. Ten talukas of Kaira district are selected for the sample. From each taluka totalling four schools are selected from rural and urban areas totalling to eighty schools, forty rural schools and forty urban schools. From each school twelve students - three B.C. boys, three Non D.C. boys and three B.C. girls, three Non B.C. girls are selected on the basis of their academic achievement. Thus the sample selected randomly comes to 30 schools, 40 rural and 40 urban, 960 students are selected randomly from each standard totaling 2880 students from standards VIII, IX and X. The PTC tests are administered to the students and 576 students are randomly selected from open and closed climate schools and the answer sheets are scored and analyzed.
TABLE - 1.1
Probable sample profile for each standard students of the sample schools

<table>
<thead>
<tr>
<th>Category</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td></td>
<td>BC</td>
<td>NBC</td>
</tr>
<tr>
<td>Good Achiever</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Average Achiever</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Low Achiever</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>BC/NBC</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Boys/Girls</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Rural/Urban</td>
<td>12</td>
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</tbody>
</table>

TABLE - 1.2
Probable sample profile for one school students of the sample schools

<table>
<thead>
<tr>
<th>Standard</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td></td>
<td>BC</td>
<td>NBC</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
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</tr>
<tr>
<td>10</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>BC/NBC</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Boys/Girls</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Rural/Urban</td>
<td>36</td>
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### TABLE - 1.3

**Probable sample profile for one standard students of the sample schools**

<table>
<thead>
<tr>
<th>Standard</th>
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<tbody>
<tr>
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<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td></td>
<td>BC</td>
<td>NBC</td>
</tr>
<tr>
<td>8</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>9</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>10</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>BC/NBC</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>Boys/Girls</td>
<td>240</td>
<td>240</td>
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<tr>
<td>Rural/Urban</td>
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### TABLE - 1.4

**Probable sample profile for each taluka students of the sample schools**

<table>
<thead>
<tr>
<th>Taluka</th>
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<th>Urban</th>
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</thead>
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<tr>
<td></td>
<td>Boys</td>
<td>Girls</td>
</tr>
<tr>
<td></td>
<td>BC</td>
<td>NBC</td>
</tr>
<tr>
<td>1. Anand</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>2. Balasinor</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>3. Borsad</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>4. Kapadvanj</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>5. Kambhat</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>6. Mahemdabad</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>7. Matar</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>8. Nadiad</td>
<td>36</td>
<td>36</td>
</tr>
<tr>
<td>9. Petlad</td>
<td>36</td>
<td>36</td>
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<td>10. Thasara</td>
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</tr>
<tr>
<td>BC/NBC</td>
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<td>360</td>
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<tr>
<td>Boys/Girls</td>
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<td>720</td>
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<td>Rural/Urban</td>
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<td>1440</td>
</tr>
<tr>
<td>Total</td>
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CHART 1-1
Map of Kheda District

KHEDA DISTRICT

KAPADWANJI
BALASINOR

METERSABAD
THASRA

MATAR
NADIAD

ANAND
PEELAD

KHAMBHAJ
BORSAD

GULF OF KHAMBHAJ
1.9 Research Design

As mentioned in para 1.6, there are four independent variables chosen for the study. For categorization of schools into "open" and "closed" climate institutional climate Description Statements has been administered to the teachers of each school for filling up their responses. From their responses the "openness" score has been arrived at.

The usual category of sex is boys and girls.

For categorizing the students into the caste i.e. B.C. and Non B.C. the government circular depicting the castes and sub castes have been taken into consideration.

The schools are categorized in two areas viz. rural and urban. The rural schools are those which are situated in the villages having less than 50,000 population and urban schools are those which are situated in the cities having more than 50,000 population.

Thus a factorial design having 2×2×2×2 dimensions has been invoked. The dependent variable is creativity scores obtained by administering the Passi Tests of Creativity (P.T.C.)
1.10 **Instruments to be used**

The following tools are employed for collecting the data:

1. **Institutional Climate Description Statements (ICDS)** devised and standardised by Dr. Anjani Mehta.

2. **Passi Tests of Creativity (P.T.C.)** to measure creativity of the students of secondary schools.

The result of the annual examinations are used to select sample from the schools to divide students into three categories viz. good achiever, average achiever and low achiever.

1.11 **Statistical Techniques**

There are three factorial designs each for Stds. VIII, IX and X. The analysis of variance technique is applied because of its robustness over other techniques. The statistical technique applied is classified as a "fixed-effects" model of ANOVA.

To locate the significance of means where more than two means are encountered, the Newmann-Keuls Sequential Range Test is employed because of conservative result. This test has been recommended by Winer, Dayton and Cochran.
1.12 Limitations of the study

The present study has certain limitations:

(i) The present study is limited to the students of standard VIII, IX and X.

(ii) The sample is drawn from the students of Kaira district.

(iii) The collected sample is limited to 2880 students, comparing of 1440 B.C. students and 1440 Non B.C. students, area wise 1440 urban and 1440 rural students.

1.13 Report of the Chapterizations

The first chapter deals with the importance of creativity in the present world and its scope. The objectives, limitations and definitions of the terms of the problem of research would be highlighted in the chapter.

The second chapter describes the conceptual understanding of the creativity. The specific focus is on the dependent variable creativity and its measurement.

The third chapter deals with the critical study of the past researches.

The fourth chapter deals with the planning and procedure of the research activity. In this chapter
formulation of hypotheses, sample and research design and the description in detail of measuring instruments are given.

The fifth chapter is very important because it gives all the necessary important data and their analysis and testing of hypotheses. The interpretations and conclusions are also made in this chapter.

The sixth chapter is devoted to the summary of the research activity, observations and conclusions of the study. The implications of the study and future suggestions for the research are also given.

In addition to these chapters, references at the end of chapter and complete bibliography, numerous tables, graphs and appendices are given.
References


8. Ibid p.78.


