

CHAPTER I

INTRODUCTION

1.0.0 Rationale of the Study

'Whether they serve in governments or factories, hospitals or universities, villages or business houses, creative leaders are sorely needed by every society. Particularly in a developing country, the economic innovator - a man willing to introduce new techniques, bear the risks of failure, and assume responsibility for change - must take the lead. Clearly, creative men are urgently needed on every strata of society ... traditional societies must seek put, train and tangibly aid their potential innovators.'

- McGord, 1965).

In the same line of thinking Education Commission (1964-66) opines : ' The aim of education can no longer be the mere imparting of knowledge or preparation of a finished product, but it is the training of character to fit the students to participate creatively as citizens in the emerging democratic order'. Therefore, a function of the school is to provide opportunities for creative growth as democracy matures and flourishes on the creative efforts of its pupils, who later become the adults. But, what of it, in the schools of today ?

One of the oft-repeated criticisms of classroom teaching is that it affords little scope of creative work for pupils.

Majority of teachers seem to be more concerned with teaching the content in the textbook than nurturing the creative abilities of pupils. There is very little scope for novelty, originality, or innovation ; no wonder, under these circumstances pupils remain placid and indifferent (Dandapani, 1973).

The school actually has been doing very little to promote the creative powers of the students. On the other hand, being an agent of social control, it has tried to maintain the statusquo and has snubbed the unconventional or unusual behaviour of students. In the name of discipline and obedience it has at best encouraged the 'convergent thinking' in the students. As conformity is the watchword of many educational institutions, they have tried to snub the 'divergent thinking'. The teachers have even dubbed the unusual questions of pupils as silly or crazy questions. The inquisitive nature gradually becomes arrested in students, because they are often told to conform to the standards, typical behaviours, etc. The parents too overemphasize the so-called good manners, values, beliefs and discourage their children's asking questions, participating in discussions with elders, etc. The ready made answer of parents for many of their children's questions is 'you will learn it later'. (Krishnamurthy and Soumini, 1977).

Through overemphasis on examinations, with recent stress on objective type only, the educational system has made the students passive consumers of facts and not the active producers of ideas. The classrooms have never been transformed into miniature workshops or studios, wherein pupils would be wholeheartedly engaged in the pursuit of knowledge. In consequence, the classrooms instead of becoming 'Centres of inquiry' have degenerated into 'lesson hearing rooms'. The teacher has assumed an authority figure and the material in the textbooks has been presented as a very polished and finished product (Sanders, 1966). Almost nothing is left for boys to choose, think, infer or evaluate. This state of affairs has gone a long way in stifling and smothering the creative spark in the children (Chaudhari, 1975).

The questions that are given in the textbooks are mostly of memory, type, which require the students to remember the ideas that are learnt in the classrooms. The absence of activities, problem-solving situations and divergent questions at the end of each chapter, has further worsened the teaching learning process.

The parents too, have sinned against their wards by overemphasizing the distinctive achievement in terms of grades and marks in the examination, and underemphasizing

the musical, mechanical and other aptitudes and skills. Instead of giving freedom and things to manipulate, they have put restrictions and decried manual work. They, in their anxiety to avoid the disturbing and frustrating situations for their children, have never allowed them to think and solve their problems by themselves. Many students even far beyond the age of adolescence, will be heavily depending upon their parents, teachers and books. The sense of independence, ability to take calculated risks, simple ones at least, will be very less in such students, which are very important qualities from 'Creativity view point'.

In this respect it would be relevant and interesting to note the educational viewpoints of the celebrated Brazilian educator, Paulo Freire (1977) who focusses on two main functions of education : (i) Domesticating function, and (ii) Liberating function.

Domesticating function of education is to use it as an instrument to facilitate the integration of the younger generation into the logic of the present system and bring about conformity to it. This is achieved through various means, but mainly through a concept of education, according to which students are considered as adaptable, manageable beings, and so are provided with information which they should patiently receive, memorise, repeat and develop domesticated

dialectic and not critical consciousness. The educational system in India today, especially at the school level has been serving this function very well, Owing to its historic origin and highly conformative nature of our people and the society itself.

The liberating function of education implies that the teachers endeavour to identify the creative potential of the students and help them develop the same. The crucial aspect of this function would be to help the children release their creativity in new and socially useful avenues. Therefore, education for such purposes should be both problem-solving and problem posing education, i.e., the students are to be helped to pose new and divergent questions about their life and education. The students must also be helped to propose more than one solution in view of the growing complexity and plurality of the life situations.

The above view-point about education presupposes alert, intelligent and creative teachers with a lot of academic freedom. But in a country like India, with innumerable problems of a developing country and many states having nationalised textbooks, the Director of Public Instruction prescribing the number of periods for each subject, etc., makes the prospect of achievement of such a goal a distant one.

In education, the individuals who are turned out are more apt to be conformists and whose education is 'completed' rather than being life long learners and freely creative and original thinkers. The system of education does not provide necessary skills to the pupils, so that they could face the future situations with confidence. On the other hand the system as well as the society reinforce the conservative behaviours of students and teachers, who continue to follow the same beaten track.

An examination of various facets of life adds further strength to the point made above. The leisure-time activities, games, etc., are mostly passive and we tend to play the same without much modification. The creative activities instead of regimented group action are much less in evidence. The stray examples of audience participation in dramas, street plays by amateur groups, etc., are a good sign in this regard.

In the sciences, there are a good numbers of technicians, engineers and scientists, who lacked the creative education, tend to continue the same system. The number of those who can put forward new hypotheses and theories is small indeed.

In industry, creative activity seems to be reserved for the few - the manager, the designer, the head of research

department, whereas the ordinary worker who may be creative, will not get a chance to show his originality except in extraordinary cases. The idea of 'participative management' has still remained utopian. Some among the workers with their unfailing perseverance and dogged optimism have shown to the public, what they are capable of. But it is unfortunate that except this minute number, many have fallen in line with the majority of conformists for whom 'to be original or different' is quite uncalled for.

In the individual and family life the same picture holds true. In the clothes we wear, the food we eat, the books we read, and the ideas we hold, there is a strong tendency towards stereotype (Rogers, 1959).

The lack of scope for creative abilities flows from the general life style of the people in the society. Some societies encourage its members to express freely and create, but many societies do not. In spite of the crippling effect of the many influences the society has on its members, some persons come up with new and original ideas. Probably the system could not suppress the creativity of those people or per chance it might have given support to those people.

In a society, where there are not many creative individuals who can invent and innovate, then such a society

becomes for most part an initiative society. The illness of initiation continues until people suitably evolve the techniques, methods, etc., applicable to the society, ethos and culture of the land. As Tagore and Andrews (1923) have observed 'We have lost in India, the creative mind; we have been satisfied with second hand knowledge and inferior imitative work'

By the logic of the foregoing analysis, it becomes imperative that the creativity should be identified and nurtured suitably in every society. It would be more apt, if the children's creative potentials are tapped and proper opportunities be provided so that the creative abilities blossom to the fullest extent. Such considerations motivated the investigator to take up a study in this direction.

An examination of some of the definitions of creativity indicates that there is very little conceptual agreement or conceptual clarity regarding the definitions of creativity. Therefore, an attempt would be made in the next section to clarify the definitions and approaches to creativity with the investigator's comments upon them.

1.1.0 Definitions of Creativity

Inspite of enormous amount of research on creativity in recent years there is little conceptual agreement as to what

creativity is. A complete listing of all the proposed meanings of creativity would not serve the purpose here, but it is sufficient to say that the definitions of the term range in scope and complexity from simple problem-solving to the actualisation of self. A few of the important definitions of creativity relevant from the point of view of the present study would be discussed here, along with the comments.

The New Encyclopaedia Britannica defines creativity as 'the ability to make or otherwise bring into existence something new, whether a new solution to a problem, a new method or device or a new artistic object or form'. This is the most obvious approach to the subject, since the products being public and readily available, are more easily assessed.

Torrance (1969) defines 'Creative thinking as the process of sensing gaps or disturbing, missing elements; forming ideas or hypotheses; and communicating the results, possibly modifying and retesting hypotheses'. This definition gives more importance to the process of thinking than the product of it, while the earlier one emphasized the product.

James (1979) quotes the definition of creativity given by Einstein which is a combination of the two approaches. It

reads as 'Creativity is a specific form of problem - solving behaviour, characterized by originality, which means production of new ideas.'

Mackinnon (1968) discusses four approaches to understanding creativity. Apart from (i) the creative product and (ii) the creative process, which have been mentioned above, the other two are (iii) the creative person, and (iv) the creative situation (press); these are popularly known as product, process, person and press approaches. In the following sections these approaches have been elaborated.

1.1.1 The Creative Product Approach :

Mackinnon (1968) enumerates five requirements to decide the creativeness of a product. (i) The creativeness of a product, when judged in terms of its novelty, originality or statistical infrequency is always relative to a given class of products. The most creative products are those that are novel or original in the experience of an entire civilisation or of all mankind. (ii) The second requirement is that the product be adaptive to reality. It must in other words, serve to solve a problem, fit the requirements of a given situation, accomplish some recognizable goal. (iii) The third requirement is a response, or product, if it is truly

a creative one, it meets the demand that the answer it provides, be an 'aesthetically pleasing one'. It is not sufficient that a solution is offered, it must also be in the mathematician's term elegant. (iv) The truly creative product in turn creates new conditions of human existence. (v) The fifth requirement of a creative product is that the insightful solution that underlies it, be realized and that it be evaluated and elaborated, developed to the full and communicated to others. In other words, the creative product must be produced.

1.1.2 The Creative Process Approach

The largest amount of literature on the nature of creative process is found in the writings of highly creative persons, who fascinated by their extraordinary creative experiences, have sought to describe them to others. There is remarkable agreement among those who have enjoyed peak experience of high creativity, as well as among psychologists who have made systematic analyses of the introspective and retrospective reports of highly creative persons Ghiseline (1952), Patrick (1955). Both types of studies have observed distinguishable stages or phases of creativity. Different terms have been used for the same phases and there has been some variation in the number of stages that have been noted.

It is even argued that these should not be considered as stages, but aspects of the creative process, since they blend together and do not always occur in the order of their usual listing.

(i) Preparation : A period during which one acquires the skills and techniques and the elements of experience that make it possible for one to pose a problem to oneself. Some have argued that the creative process always starts with the recognition of a problem.

(ii) Concentrated Attention : This may be a brief period of time during which attention is focussed solely upon the problem in order to get at a solution; but when the highest levels of creativity are ~~at~~ ultimately reached there is a blocking, resulting in frustration, tension and out of sheer self-protection one is led to the third phase.

(iii) Withdrawal from the Problem (Incubation) : This is a period of renunciation of the problem or recession from it, when no conscious effort is done to solve the problem. Following this phase is a period of incubation of variable time duration.

(iv) Insight : A moment of insight, accompanied by exhilaration glow and elation when the solution is in view.

(v) Verification : A period of verification, evaluation, elaboration, realization and communication of the insight that has been experienced. These phases may happen in a brief period or may take considerable time also.

A more searching analysis of creative process indicates that creative process is a complex set of cognitive and motivational processes, involving perceiving, remembering, thinking, imagining, deciding, etc. From Guilford's (1959) conceptualisation of intellectual process and factor analysis of the correlated test scores of large number of persons, have emerged what he believes to be the primary intellectual factors that account for individual differences in creativity; associational fluency, ideational fluency, expressional fluency, originality, adaptive flexibility, spontaneous flexibility, redefinition and sensitivity to problems. Each one of these traits has been explained with reference to the types of tests he developed (Guilford, 1959) to measure the traits. Sensitivity to problems is an ability to state defects or deficiencies in common implements or social institutions or to state problems created by common objects or actions. Associational fluency is an ability to produce many synonyms for a given word, characterised by their meaningfulness. Expressional fluency

is an ability to produce phrases or sentences, requiring to meet the criterion of sentence structure. Ideational fluency is an ability to produce ideas to fulfill certain requirements, important in problem-solving situations.

Spontaneous flexibility is an ability or disposition to produce great variety of ideas, with freedom from inertia or from perseveration, characterised in general by rapid fluctuations. Adaptive flexibility is an ability to adapt to new assumptions in a problem that requires most unusual type of solution. This ability facilitates the solution of problems.

Originality is an ability to produce clever, unusual or remotely associated and statistically infrequent ideas, characterised by quality. Redefinition is an ability to give up old interpretations of familiar objects in order to use them or their parts in some new ways. Improvisation in general reflects the ability of redefinition. Elaboration is an ability to construct, develop meaningfully the outline or ideas.

Out of this work (Guilford, 1959) there has developed a widely recognized distinction between convergent thinking, which places a premium on analysis and reasoning, measured by traditional tests of intelligence, and divergent

thinking, which emphasizes richness and novelty of ideas for the measurement of which new tests of creativity have been developed. But both are included and inherently related in all creative thought, although their relative proportions vary from one creative task to another. Other methods of studying creative process have also been developed, like seeking insight into the creative process by attempting to stimulate creative problem solving and thinking on high-speed electronic computers.

1.1.3 The Creative Person Approach.

Creativity can also be understood in terms of abilities or functions of the creative persons, the way they express, etc. The determination of characteristics of creative persons requires first that such individuals be accurately identified and the level of their creativeness measured, which means that the problem of criteria that is seldom if ever ideally solved. The criteria that are often used for judging the extent of creativeness are : (i) performance on creativity tests; (ii) evaluation of products created; and (iii) measuring person's self-actualisation, etc.

Many times the subjects' performance on the so-called tests of creativity have been taken, despite the fact that it has not been clearly demonstrated that, the performance on these tests is a valid measure of his actual creative ability.

When the persons are judged on the basis of their products, such judgements even though made by the experts, are apt to be contaminated and confounded by factors such as social prestige, reputation, etc. When the person's creativeness is taken to be the degree of his self-actualisation or the extent to which he is a fully functioning individual, the criterion is even more vague, because of the difficulty involved in the definition and measurement of such a construct, viz., self actualisation.

Creativity-Intelligence Distinction : The creative person appears to be intelligent, but there is low correlation between intelligence and creativity scores as measured by psychometric tests (Getzels and Jackson, 1963); Wallach and Kogan, 1965). The inference is that a certain degree of intelligence is required, if one is to be creative, but beyond that point, say I.Q. of 120, being more intelligent does not determine the level of person's creativeness. The levels of intelligence differ from one professional group to another. In addition to general intelligence, special skills appropriate to a person's field of work are also necessary to show his peculiar creativeness in that field.

The personality test results of highly creative people provide some important traits, even though there may be contrary results in some experiments (Barron, 1955;

Mackinnon, 1962; Roe, 1952). A general picture of the productively creative person would be like this :

- He is dominant, possessed of those qualities and attributes which underlie and lead to achievement of personal status; poised, spontaneous, self-confident in social interaction, although not of an especially sociable temperament, intelligent, outspoken, sharp-witted, demanding, aggressive and self-centred; persuasive and verbally fluent and relatively uninhibited in expressing his worries and complaints.
- He is comparatively free from conventional restraints and inhibitions, not pre occupied with the impression he makes on others and thus, he is capable of great independence and autonomy.
- He is not inclined to strive for achievement in settings where conforming behaviour is expected or required. In efficiency and steadiness of intellectual efforts, however, he does not differ from his fellow workers. Finally, he is definitely more psychologically minded, more flexible, and possessed of more femininity of interests than less creative persons.

Some of the traits mentioned above seem to be manifested functionally in quite opposite directions in individual personalities, but the general picture however, signify the creative persons. Some of these personality traits may be found in ordinary persons, but they do not become highly creative, because they have to be specialised in some field

and apply the creative process to produce a creative product.

1.1.4 The Creative Situation Approach or Press Approach

To speak of creative situation or press is to imply that creativity is not a fixed trait of personality but something that changes over time, waxing and waning, being facilitated by some circumstances and inhibited by other situations in life.

In the life-history data, widest variety of early circumstances and family situations has been collected from persons of high creativeness by the experiments of this school of thought like Mackinnon (1961), Drevdahl (1956) and others. Despite the diversity, there are, however, several themes to be noted, like : remembered unhappiness in the childhood; an extraordinary respect by the parent for the child; early granting to the child unusual freedom of exploring his universe and in making his own decisions; a lack of intense closeness between parent and child, so that neither overdependence was fostered nor a feeling of rejection experienced; an emphasis on the development of an individual ethical code; the experience of frequent moving within single communities

or from community to community or from country to country which provided an enrichment of experience, both cultural and personal, but which at the same time contributed to experiences of aloneness, shyness, isolation and solitariness during childhood and adolescence; absence of pressures on child to establish prematurely his professional identity, and many such themes.

Some of the common early life experiences of highly creative persons mentioned above, do not fit any single individual. These experiences cannot be provided to the children by the investigators, if they want to make the children creative, as there are other variables influencing the children, like, their personality, family bondages, etc. The same influences may have different effects on different children. It is an ethical question as to who should manipulate, how much, etc. The possibility would be the parents' education, with a creativity component, who may provide environment depending upon the family situations.

The above four approaches are not to be taken as strictly distinguishable, but they are highly interrelated. A high creative individual might have had good early life situations and has personality traits suitable for a creative thinker and may follow different stages of creative thinking to arrive at a creative product. The

expression of individuals who are creative, differs from person to person, that is, it is highly individualistic. The way in which a creative person expresses is difficult to predict, as his creative ability coupled with temperament, mood, values, and more than these 'inspiration' takes a peculiar form of its own.

In defining 'Creativity or Creative Thinking process as well as in undertaking a research study in this area certain problems and issues crop up. In the paragraphs to follow an attempt has been made to clarify these problems and issues in the perspective of which the investigator has concretised the problem of the present study.

Osborn (1971) classifies creative energy into two main types, emotional and volitional; they cannot be clearly separated. The driving power must come from our feelings and wills. That is, the creative thinking is not purely an intellectual process but is dominated by emotions from the start to the finish. Bhaskara (1979) has discussed the relationship of emotional stress and creative production taking four specific instances from typical cases at undergraduate level. Therefore, the question would be, how best could the children be involved emotionally in creative problem-solving or creativity tests to draw out their best ?

These and many other recurring problems of creativity research are still unsolved.

One such important problem is, should the creativity tests be 'group tests' ? The advocates of 'person' school of thought argue against the creativity tests being administered as 'group tests' because the 'individual' would be lost sight of and recognized as a mere score.

Another related issue is ' should the creativity tests be timed ' ? Methodologically and for comparison purposes, the timing of the tests becomes important. There is a view, viz., that a person may not be able to express himself creatively, when he is asked to do within the prescribed time limit, or a person might get a flash about the idea, even after a few hours ! Another view is that, the creative children, being fluent verbally and figurally, will be able to respond within the prescribed time, or they may finish even earlier than the given time. Taking into consideration, the economy of time and money, the timing of the tests and vis-a-vis group tests will stay, till a better workable new testing procedure solve the related problems.

Are the criteria for 'originality', namely, the answer being clever, uncommon and statistically infrequent,

sufficient ? Is the calculation of one in hundred responses as original (Mehdi, 1970), superior to giving weightages from 0 to 5 (Passi, 1971) according to level of uncommonness of answers ? A definition of creativity goes to say that creation is original to the person or to the culture. If we agree on this idea, in the tests of creativity 'the creation being original to self' is not being considered at all. Perhaps one of the way to make up this deficit may be to ask the child to rate the 3 responses per test as 3, 2, 1 (Most original, More original and original) among the ideas. While scoring by statistical infrequency method, if the most original idea of the child itself gets 5, then the product of 5 and 3, i.e., 15 would be highly representative of his originality. Otherwise, the rating of 3, 2 and 1 must be included in his originality score. These have remained as problems with the creativity researchers till satisfactory answers are found.

Keeping these difficulties and the different views on creative thinking process in mind, the investigator accepted Passi's (1971) definition as the operational definition of creativity. The reason for accepting Passi's definition over others were : (i) The Passi tests of Creativity (Verbal and Non-verbal) were available which could be used for testing the creative thinking abilities of children, (ii) It is a

'process' definition and the investigator was interested in manipulating the 'process' through instructional materials, (iii) The definition was based mainly on Guilford's and Torrance's approaches, whose work in the field of creativity research is well known, (iv) The definition has a hint of 'product' too, which has also been emphasized in the instructional materials developed.

The definition reads as follows : 'Creativity is a multidimensional (verbal and nonverbal) attribute differentially distributed among people and includes chiefly the factors of solving problems, fluency, flexibility, originality, inquisitiveness and persistency. It may be pointed 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 creating new ideas and establish novel patterns and relationships'.

The present investigator with the preliminary survey of related researches, has started with a reasonable possibility that creative abilities could be enhanced. It automatically follows that certain activities and experiences are to be provided, which would help the subjects think fluently, flexibly and originally. Instead of leaving everything to chance regarding the creative person and waiting for the creative product, till it is created, the investigator has reason to hope that by providing suitable experiences

and manipulating the environment to the extent possible, the creative thinking abilities could be fostered. The investigator's view was strengthened by the discussion of two approaches by Covington (1968); the traditional one is to teach in such a manner that the child will come to act creatively in a number of different subject matter disciplines. Another contrasting, yet a complementary possibility, is to teach for a number of cognitive skills fundamental to all creative thinking and then show the student how such generalised skills can be applied in specific subject matter areas. This latter strategy carries with it the implication of developing instructional materials whose subject matter is the creative thought process itself. It is this approach which was followed by the leading researchers like Covington, Crutchfield, Davies, Olton and others, and is being explored by the present investigator too.

1.2.0 Statement of the Problem

In our classrooms, the instructional materials and the teaching methods that are used do not help in releasing the creativity of the children, and so some special creativity instructional materials to stimulate creative thinking are to be developed and tried out on various

types of students to ensure their effectiveness. The investigator's view was strengthened by the views of Bartlett (1958) and Guilford (1967) in this regard. Both regard thinking abilities as intellectual skills that are trainable, by analogy to psychomotor skills. These skills have been developed largely by informal practice and they should be improvable by virtue of formal practice, which should apply to creative thinking abilities as well as any other thinking ability. Taylor (1966) has also expressed a similar opinion.

Creative thinking in essence is a way of problem-solving and where there is no problem-solving involved, it is a way of using one's ideas for productive purposes. Every child can be trained to use his mind creatively. It does not mean that each one will become an Einstein or a Shakespeare, or a Beethoven; can be a creative writer of a good repute or atleast a creatige carpenter or a creative salesman . Creativity, as any other ability, functions at different levels. Atleast five levels of creativity have been identified. They are (i) expressive creativity, which involves spontaneous independent expression, where the quality is unimportant and there can be very little originality. (ii) Productive creativity, where there is a

tendency to control freeplay and improve technique, but at this stage too, the products may not be different from those of others. (iii) Inventive creativity, where invention and originality are important, which involve a perception of 'new and unusual relationships between previously separated parts'. (iv) Innovative creativity is found in a few people only. Here there is a modification of the basic foundation of a whole field of study in the arts or sciences. (v) Emergentative creativity, where only geniuses will work, and the product emerges in its most fundamental and abstract form (Jones, 1972). These levels have been arranged hierarchically, while every one participates in the lower levels, only the highly creatives arrive at the upper levels As it can be seen from the definitions of the levels of creativity, with the most children, we can work upto the second level atleast and it is worth doing. Quite a number of them could also work at the third level. What the teacher has to do in this connection is first to learn to respond to the creative needs of the learner and then be ready to go beyond textbooks, classroom and the prescribed syllabus. It seems to be a common life experience that 'men fundamentally prefer to learn in creative ways, through creative problem-solving activities'. Creative teaching and learning open exciting possibilities both for the teacher and the child (Mehdi, 1977).

One significant research evidence has been provided by Rusch, et al (1967). They found in their study that fostering creativity did not have a negative effect on achievement. This boosts the confidence of the researchers like the present investigator, that the attempts for the enhancement of creative thinking abilities of children may not in any way affect their achievement.

The earlier works in this area of developing curriculum and instructional materials as mentioned by Torrance (1974) were; Myers and Torrance idea books (1964, 1965), The Cunnington and Torrance 'imagi/craft' materials (1965), The Purdue Creativity programme (Feldhusen, et al. 1970), The Covington-Crutchfield Davies productive thinking programme (1972), Gordon's 'Making it strange' series (1971), and Renzulli's 'New directions in creativity programme (1973), etc.

Many more researches have been carried out to add to the above list of developing curriculum and instructional material abroad. To date, more than 700 techniques, methods, materials of fostering creativity have been developed in U.S.A. alone. In India, creativity researchers are catching up, with other areas of research in behavioural sciences. Out of 24 studies reported (Buch, 1974; 1978),

Nine studies were in Test Construction and related studies, thirteen were correlational studies and related researches, and two were intervention studies of fostering creativity. Those intervention studies were by Nirpharake (1977) and Pillay (1978). One more intervention study not mentioned in Buch (1974, 1978) is that of Deshmukh (1977).

Nirpharake (1977) combined different techniques and developed instructional materials to foster creative abilities of VII standard children. Pillay (1978) used the techniques of fostering creativity, viz., Brainstorming and Morphological synthesis, in Geography. Deshmukh (1977) studied the effectiveness of Brainstorming and Role playing in the secondary schools of Nagpur. All the three researchers have adapted the techniques developed abroad, to the Indian setting. Hardly any study has been reported which has indigenous know-how and suitable to the culture and ethos of the land.

In the present study, an attempt has been made by the investigator to develop a 'scheme of activities', to foster the creative thinking abilities of VI standard children in Karnataka. The title of the study reads as 'A Study of the Effectiveness of Verbal Creativity Instructional Materials at School Stage.'

Whenever a technique or 'scheme of activities' is developed, it has to be tried out on varying types of groups, like boys-girls, students of rural-urban areas, students of different socio-economic statuses, students of different creative potentials, students of different intelligence quotients, students of backward groups, etc., and validated. For the present study, the investigator selected four such variables to validate the verbal creativity instructional materials.

Therefore, the title of the study may be elaborated by stating that it is a study of the effectiveness of verbal creativity instructional materials on students of different creative potentials with regard to their sex, socio-economic status and rural-urban backgrounds.

1.3.0 Objectives of the Study

After elaborating the rationale of the study and clarifying the problem of investigation, the objectives of the study can be pinpointed as follows.

- (i) To assess the creativity of students of standard VI. in the Bangalore district of Karnataka.
- (ii) To prepare the verbal creativity instructional materials for enhancing creative thinking abilities of VI standard children.

- (iii) To determine the effectiveness of verbal creativity instructional materials with respect to certain variables, viz., different creative potentials, levels of socio-economic status, sex and rural-urban backgrounds and the interactions of the these variables

1.4.0 Definitions of the Key Terms and Variables Used

The important terms and variables used in the objectives have been defined under this section as it serves the purpose of bringing clarity to them. The definitions also serve as the conceptual frames of reference, with which the study has been conducted.

(i) Instructional Materials : Anything which supplements instruction; in the classroom may be called as 'instructional material'. It may be the diagram or audio visual aid or exercises or lesson plans or programmed sheets.

Verbal creativity instructional materials imply solving of consequences situations, puzzles, riddles, divergent problems, mystery plots, writing of stories and poems, construction of riddles, at strategic points in the fantasy, adventurous and other stories, specially written for the VI standard children.

(ii) Creative Potential : The scores on the Passi tests of Creativity reflect the creative potential of students. After scoring the answer sheets of all the students on Passi tests of Creativity (Pre-test), the students who will be above 75th percentile will be taken as high creatives, the students who will be below 25th percentiles will be taken as low creatives, and those who fall in between will be considered as middle creatives.

(iii) Socio-economic Statuses : Foster (1971) found no evidence that creativity ability as measured by a variety of tests and ratings, was in any way significantly related to the social class of the parents of the children. In India, as the socio-economic disparity is quite large between different sets of people, the investigator thought it fit to study the effect of socio-economic status on the gains in the creativity test scores of children.

After scoring the socio-economic status scales filled by the students, the weighted scores will be converted into 'T' scores, as per the table given in the manual by the authors (Aaron, et al. 1969). The students who will be above the Mean + 1.5 S.D. will be taken as high SES students, the students who will be below $M - 1.5$ S.D. will be taken as low SES students. All these who fall in between $M \pm 1.5$ S.D.

will be considered as middle SES students.

(iv) Rural - Urban Backgrounds : Sharma (1971) found in his study that rural students were more creative than the urban students. This finding encouraged the investigator to have rural-urban backgrounds as an important variable in his study, to find out whether the rural or urban students would be doing better in the intervention study i.e. who would enhance their creative thinking abilities much better than the other.

The students belonging to the villages having Panchayat will be considered as rural students. The students belonging to cities having municipal corporation will be considered as urban students.
