Bronowski (1958-59) distinguishes among discovery, invention and creation by pointing out that Columbus discovered the West. Bell invented the telephone and Shakespeare created Othello. A fact is discovered, and a theory is invented, but only a masterpiece is created for creation must engage the whole mind.

- George Demos and John Gowan
CHAPTER I

PROLOGUE

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1.0 Introduction

Recognition of creativity has become inevitably an international pervasive reality. Whether it is considered from the viewpoint of its effects on society, or as one of the expressions of the human spirit. Creativity stands out as an activity to be studied, cherished and cultivated. In one form or the other, there is a world-wide concern about creativity. Advanced countries are definitely interested in the study and development of creativity, as are the third world countries whose survival depends upon the creative vision and creative striving of the masses. Beyond the local interest, whether individual or national, is the increasing recognition by men in all parts of the globe that our capacity for creative thought and action may literally make all the difference in the world. Human creativity may prove to be the key to success or failure in mankind's quest for knowledge, in his journey beyond the bounds of the surwe and the seen, in his exploration of the unknown.

Development of creativity and concern for it, is not only a social reality but an individual also.
Creativity assumes a new urgency at a time when the philosophical horizon is consolidated more closely around man. The factor of boredom, the challenge of space, the need to transcend daily life as defined in established configurations has made clear the need for the search of excellence in man and information about positive aspects of human nature and its interior regions.

Studies on the improvement of men's health, happiness, and social situations, showed that there are certain "effective properties" which make "men equal not their physical, social and intellectual abilities". These "effective properties" stimulate life and in long run manifest creativity in all human beings. Thus all human beings, to a greater or lesser degree possess the creative ability. Arasteh and Arasteh pointed out:

"The degree of awareness of creativity and the quality of 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 all the psychological tests ever made, it is concluded that the creative talent is normally distributed. That all of them possess the talent-creative talent-ability to some degree, or more.
Whether this talent can be developed by training is questionable. The point is that the student can be trained to use more productively the talent which he innately possesses. This training is subject to disciplines similar to those applicable to the mastery of any subject. Incidentally, creative imagination is itself a basic tool in the acquisition of knowledge; for, knowledge becomes more usable when imaginatively synthesized and dynamically extended.

1.1 The Concept of Thinking

'Thinking' defined as "mental-activity" is correct, since it covers everything. But it is not very helpful. On the other hand a definition of thinking as "logic and reason" is correct but it covers only one aspect. According to Edward de Bono\(^2\), "Thinking is the deliberate exploration of experience for a purpose". That purpose may be understanding, decision-making, planning, problem solving, judgement, action and so on.

The education trinity is: Knowledge, intelligence and thinking. Intelligence is an innate quality that may depend on genes, early environment or a mixture of the two. Intelligence is regarded as the speed of processing within the brain which gives an intelligent child a larger scan over the same period of time.
Thinking is the skill through which intelligence acts upon experience. More will be said later on about the relationships between thinking and intelligence. Knowledge or information is the basic material handled by thinking.

It is true that at one extreme thinking is impossible without some information on the subject, at the other extreme perfect information would make thinking unnecessary. In between these two extremes both thinking and information are required.

In school subject, it is too often assumed that information is more important than thinking. Thinking is regarded only as a tool for assimilating information, classifying it and putting it into its proper place. Information is very much easier in teaching rather than thinking.

It is a common experience in the academic world to find people who are so well informed within their own speciality that they can be classed as brilliant. However, their ability is much less for information can no longer be a substitute for thinking.

Always to aim at getting information is admirable but to a wit perfect information is impractical. In the ordinary world, decisions and actions have to be taken and since the information is usually imperfect, it has to be supplemented by good thinking.
Textbook problems are usually closed-ended. This is to say there is a definite known solution and all the required information is provided. Real life problems are more often open-ended. That is to say there is no definite solution and much of the required information is missing.

It is best to remember that information is no substitute for thinking and that thinking is no substitute for information. There is a need for both.

1.2 Divergent and Convergent Thinking

Psychologists have during the last decade, developed an intense interest in creativity as a topic for research. This interest has led to the development of theories about the nature of creativity, of questionnaires and other instruments to measure creativity, and of experimental techniques designed to encourage, foster, or stimulate creativity.

Most of this researches have been initiated as a result of a paper published by J.P. Guilford (1959), in which he differentiated between convergent and divergent thinking processes. Most education, he pointed out, is concerned with promoting convergent thinking, the kind of thinking in which students are encouraged to find the "right answers" to problems. Such a process assumes that there is a single right answer and that exists somewhere, usually in the textbook or in the course of study. Divergent thinking is concerned with
approaches such as speculation, imagination, heuristics, and invention, processes that are based on the assumption that there may be several good ways to solve a problem. Creativeness depends on an individual's ability to innovate and to perceive new relationships and therefore demands some divergent thinking.

In as much as most class instruction, fact-oriented as it is, reinforces convergent thinking, students do not have to think divergently to get top grades. Divergent thinking is usually regarded by teachers as irrelevant, time-wasting, or merely "wrong", and consequently is likely to go unrewarded. Most standardized objective tests including tests of intelligence, measure convergent thinking, which may be one of the reasons that they correlate so highly with teachers' marks. The routine administration "don't guess" is indicative of the bias against divergent thinking. Convergent type thinkers refrain from guessing and are not inclined to answer a question if they are not certain of the answer.

This state of affairs has led some psychologists and educators to criticize teaching methods and measures that penalize creativeness and thus place the more creative student at a disadvantage. In one study, Jacob W. Getzels and Philip W. Jackson (1962) elicited teachers' reactions
to students scoring high on tests of intelligence and creativity. Students who scored high on one measure tended to score high on the other, but there were some students who scored high on intelligence but not so high on creativeness and others who scored high on creativeness and not so high on intelligence. Both of these groups did equally well on standardized tests of academic achievement, but teachers reported that they preferred to work with the high-intelligent rather than the high creative group. Indeed, the latter group could qualify as "underachievers" if we apply the criteria discussed earlier.

1.3 Present Classroom Situation

When we think of the 'Present Classroom Situation', we should not forget to peep into the present education systems, including the schemes and syllabus framed and selected by the Government. The problem that harasses our mind is regarding the present education systems. And the question that arises in our mind is: Is it effective or defective and to what extent?

The present education system sounds defective and deficient because we cannot give educative programmes to the students and the government schemes and syllabus have no specific criteria, this is why we find no scope of
development on the part of pupils to satisfactory extent.

The class is a mixture of various types of students or say it comprises heterogeneous groupings of students. There may be creative children, intelligent children, gifted children as well as problem children. The creative-minded students get no opportunities to develop to expected extent as they find neither variety nor novelty in teaching material. This happens to the gifted children as well. Due to the lack of novelty, their intelligence is not tested and they get uninterested. Thus, specific programmes are not handled and gifted children are dragged to common stream. As a result, they become the victims of deformity later on and they turn out to be problem children. The problem children are the production of our defective present education system.

Only the present education is not to be blamed, but, along with that, the teachers are also to be held responsible for present classroom situation. They emphasize merely the good qualities of the students like sympathy, sincerity, honesty, obedience etc. Thus the nature of the students is expected to be good instead of developing their brain. But it is not sufficient because mental development is more significant in comparison to other aspects like sympathy, sincerity, obedience etc.
Besides, the teachers do not like or they cannot tolerate the leadership of a particular student in the classroom. They are not ready to accept the freemindedness of the students due to their high-handedness. Truly speaking, the students are formal rather than frank and friendly in the classroom. For fear of teachers' humiliating statements and disheartening words, the students feel a sense of insult and it becomes an obstacle on the way of mental growth because they cannot express their views and ideas freely. This later on leads to frustration and results into futility. This is nothing but the depression of creativity.

In short, the teachers should give freedom to the students, accept their ideas and free-mindedness without letting them feel any complex of humiliation, and this will help the young minds of the modern students be free, frank, friendly, fruitful and fertile-minded.

1.4 Problem Statement

The problem for the present study is:

"AN INVESTIGATION INTO THE CREATIVE THINKING ABILITY OF PRIMARY SCHOOL CHILDREN WITH REFERENCE TO SOME SOCIO-PsyCHO VARIABLES"
1.5 Key Words

In order to analyse the problem, it would be necessary to be precise about the connotations and meaning of the key words involved in the statement of the problem.

1.5.1 Thinking

Good explains thinking in his dictionary of education as under:

(a) Mental activity, as distinguished from sensation: may be cognitive or problem solving.

(b) As conceived by some behaviourists, minimal behaviour (such as subvocal talking) that may provide cues to covert behaviour, thus, in solving a problem by thinking, action is at a minimum and trial and error can occur, some minimum actions serving as cues for inhibitor responses.

1.5.2 Creative Thinking

Good defines creative thinking as below:

Creative thinking that is inventive, that explores novel situations or reaches new solution to old problems, or that result in thoughts original with the thinker.
1.5.3 Ability

Biswa stated in his dictionary that "Ability is the actual power in a person to perform any work".

1.6 Limitations

Every study has its own limitations and thus this study has limitations too as below:

(1) The present study is confined to the Gujarati speaking children only.

(2) It is restricted to the primary schools of Anand Taluka only.

(3) The study is again confined to the primary school children studying in the classes from second to fifth.

1.7 Characterization

The report of the study has been compiled in seven chapters. The purpose of the characterization is explained below:

The first chapter gives comprehensive outline of the study.
The second chapter explains the concept and components of creativity. It also explains the content area of various creative tests. In short, the techniques of constructing creative tests are discussed in detail.

The third chapter describes the main research studies in the field. The description has been divided into two parts: (1) Review of the Test Construction and (2) Review of the Researches in the field of creativity.

The fourth chapter describes nature of the study and its characteristics. It deals with the work of the test construction and the study undertaken. It contains the description of tools and techniques used.

The fifth chapter deals with the construction of a reliable and valid creative test. Finally, it gives the idea of administering the test and scoring work done.

The sixth chapter shows the statistical analysis of the total creativity score into two phases (i) Grade x Sex x Birth Order and (ii) Grade x Stream x I.Q. factorial design to be used to test the hypothesis formulated in the previous chapter.

The seventh chapter contains the investigator's observations and the conclusions and lastly the suggestions for further study.
References


5. Ibid., p. 424.