CHAPTER I
INTRODUCTION, SIGNIFICANCE AND AIMS

Introduction

Creativity is a basic trait of human beings:

To be is to act and in a sense to live is to create. Creativity is an axiomatic principle of man’s life. No culture could ever make a headway without taking note of its creative leaders. When attempts were made to crush the creative urge, they often resulted into fostering revolutionary processes.

Inertia in thinking and habits is the rival principle which has inhibitory effects on the smooth working of the law of creation. The history of progress in science, literature and arts is really the outcome of the struggle between these twin principles.

Powerful thoughts, however, incongruent with the set beliefs, emanate even though they may be fatal to the thinker himself. The common mind, often lazy, feels secure to follow the set beliefs and hardly tolerates incongruence resulting from disbelieving.

This tendency to adhere to established patterns is sometimes exploited by powerful leaders for strong opposition to new trends. Otherwise, as Arnold Toynbee (1964) puts it, “In any human society, at any time and place, at any stage of cultural development, there is presumably the same average percentage of potentially creative
spirits ... whether a potentially creative minority is going to become an effectively creative one ... will depend on whether the minority is sufficiently in tune with the contemporary majority, and the majority with minority ... "

Creativity and society:

To a large extent whether majority and minority tunes accord or discord depends on the policies of the rulers. Hence, in the history of creative thinking, consideration of political forces comes first.

Political forces have operative value in the sense that they either encourage or discourage creative act, and also widen or narrow down the opportunities of experience, which confine the way and scope of working mind. A concrete illustration is from home. During the British regime over India, the art in fabrics for which she was formerly famous the world over, vanished. But in the same regime, when the rulers imposed learning of English, it opened the routes to all points of compass.

Political security is essential for creative achievements but what history shows is that unique achievements emerge at any time, and that the progress of any culture is more like a curvature than like a straight line. In this curvilinear development, the crests and hollows of social life do not always coincide with the peaks and chasms in its creative life. On the contrary,
very often, the period of extreme social and political chaos has given rise to really fresh and novel thoughts. Perhaps drastic conflicts heighten the necessary stimulation. For instance when creative urge was suppressed in medieval India, the freedom of thought pierced through the hard rocks of Vindhyas to give marvellous sculptures and paintings.

Political security assures a certain level of creation, but it is usually of the mass production type and not necessarily the cream of creation. History of any literature may bear out this observation. The origin of Hindi literature can be traced to the need of encouragement and exhilaration of the young Rajputs. Repeated invasions of Mughals put their life under terrific stress but Hindi literature had its time of prosperity and glory. On the other hand in the regime of peaceful Mughal emperors it could not see those heights which it could see in the hands of saints.

The dark period in European literature prepared the ground for Bacon. Bacon's attacks on scholasticism created an attitude which paved the way for the growth of science. In this connection Machiavelli's name should not be passed by. Many a time certain inventions like printing, became the most facilitating factor.

Thus we can hope to trace a certain order preceding creation even in the life of society as a whole. First, there is a period of unrest; a way of thought is sought; there are many trials and errors and then a gradual development of web
In various aspects. Environmental factors facilitate or inhibit it for a certain period and there is then striking upsurge or outbreak of noteworthy creations.

Great creative leaders in science:

That the favourable atmosphere encourages creativity but at the same time creativity emerges at any time facing hardest difficulties, can be seen in the lives of eminent scientists.

Till modern times all thinking had its end or origin in religion, the mightiest power of Middle Ages controlling the life of society and individuals. Cruelty, oppression, harassment were the 'rewards' for creative achievements. However, while reviewing biographies of creative leaders what we find is that ill fate or unfavourable social, religious or political atmosphere were not the common things. When Galileo had to suffer from social injustice, his contemporary, William Harvey, could live a very happy life in England.

Creative leaders sometimes have to endure frowns of fortune in their early years of life or even till their last moment. Their original ideas may or may not be accepted, but to work for knowing the unknown is their life. Persistence in any situation is their common characteristic. They work hard. As Edison used to say, "It is 98 per cent perspiration and 2 per cent inspiration."

One more obvious similarity was that creative leaders were different from their peers. Many times they
found it difficult to adjust in a school. Often they had sheer dislike for the rigorous course work. They loved nature more and enjoyed observing minutely the fund of natural things and processes. However, if they were made to complete the course, they could do so easily. It was not the inability that caused occasional failures but stronger inclination to do other things.

They had variety of inclinations though they had followed a single line in later years. Almost all scientific men had interests in arts in their childhood and some of them could retain their interests. When Einstein would go out, he would have two things in his hands – his bag and a violin.

This variety of interests was the characteristic of their mature abilities too. Scientific thought was one for them. Many scientists were competent to deal with problems in various fields. To name a few for example: Newton, Bhaskaracharya (the Indian mathematician 1114-93 A.D.), Carl Lynneaus, Benjamin Franklin and Jagadishchandra Bose had such a competence.

The third common thing is that creative leaders had their first and also famous ventures in their young age. Galileo, Newton, Pascal, Einstein, Raman, propounded new theories in their teenage. Most of the discoveries were made before the age of 45 years. This association of young age and creative potential is so obvious and cogent that while introducing the audience at Utah conference, Olpin in
the very beginning reproduced Midgley's words that, "For genius and display take youth, for cold calculation and planned execution take age, ..." (Olpin 1963, P. 3).

Risk taking is one more common characteristic of creative leaders. They are so empowered by their creative urge that the consideration of the risk situation is too weak to inhibit the behaviour realizing their urge. It is the stronger motivation and not the inadequate perception which induces courage.

Complete absorption in working out one's own ideas, is the natural consequence of everstimulating urge. Very often it makes the creative forget worldly pleasures and routines. Common man is not able to imagine how Pasteur could forget to go to the church for his own marriage. Sometimes this extreme engrossment in the work makes them introvent and careless for one's own health.

Such is the general picture of the great creative leaders. The social intolerance for creative man disappeared through ages. Instead of the aphorism that 'The God is the only creator', people accepted that man can be creative and act of creation is not blasphemy. We began honouring the genius for his creation. However, we had not recognized till the recent years, that the creative potential cannot adjust with routine course studies, and that to make this potential explicit old habits of thinking would not help.
Significance and Aims

Need for the systematic study of creativity:

Feber in 19th century had attempted a training course to develop the habits of keen observation and openness to experience. He was a great entomologist; he was still greater as a man who could anticipate the possibility and need for training the common man in habits facilitating creative performance. Had it been cognized then, the research in creativity would have started earlier in a different form. But to miss some leads is the fate of mankind.

In their biographies, we described the great scientists and poets more often as the genius than as the creative. Further, while assigning their giftedness and originality to their intelligence we never thought of the possibility that some more cognitive abilities apart from intelligence would be making for high creativity, and characteristics of creative thinking can be seen in those who are not styled as genius.

The creative minority is one of the chief resources of developing nation. To know about the requisites of creative performance and to provide for them is essential for human progress. However, identification of and education for creatives were undertaken only after Guilford's recent work. Various studies since then have shown that the conventional IQ metrics do not identify creative potential, that the creative potential requires different environment to flourish.
and that people can be trained in the habits of creative thinking. Scientific progress will not accelerate unless we realize and work out this fact.

**Creativity and Planning in India**

One may be excused if one feels that we as a people have hardly given any consideration to creativity while planning for progress in our country. What have we done for and gained from scientific research and educational development? In the First Plan, we established various research institutions and wanted a large number of scientists. It was also recognized that '... the undue stress on examination and memory work is not conducive to the development of originality or a spirit of research.' However, we have not been able to put these pious precepts into practice. Without improving examination methods and selection procedures in the light of the fact recognized, we aim to give higher education to the selected 2 per cent of school going population. If these selecteds include very small portion of the creative potential, how can we expect marvellous outcomes from our research laboratories? At the end of 1953, planners found only 177 inventions reported for development. Second Five Year Plan also established more research departments, but the results were not satisfactory. The Questionnaires on National Planning for India asked experts 'how to supply and maintain the proper type of research workers.' The first two plans expanded our educational programme but need for identifying specific
educational objectives was felt while planning for the third. Again the evaluation of progress during first three plans runs like this '... research and development has not made adequate contributions to growth so far and career in scientific research in India is not yet sufficiently attractive.' What measures are proposed to meet these conditions is not stated in the report of the Fourth Plan. What we find is that this plan proposes to spend more.

Is this going to increase the number of original thinkers in the same proportion as that of literates, graduates and technicians? We can hardly say that the boy entering the school in 1969 has got more opportunities to express his creative urge than the boy who entered in 1949.

Our planners have Russia's planning as their guide-post, but very unfortunately they missed Russia's educational policy which insists on special education for special abilities. Kothari Commission (1966) now considers the need for higher courses in Science and Mathematics for the talented. The Commission wants the laboratory work to be 'investigatory' and not 'confirmatory'. Research work is necessary to stimulate creativity. The Commission considers the relation between education and productivity. For creativity, it thinks in terms of arts and co-curricular activities as physical education.

What the Commission means by 'talented' is not stated. Conventionally it would mean a good scholarship. Still we do not think of identifying creative potential
in itself. In selection procedures, where some psychological tests are used, we use intelligence tests and some aptitude tests. The potential measured by these tests does not guarantee high creativity.

Our training procedures also are away from the needs of creative potential. The present educational techniques and curricula aim to meet the requirements of developing a specific kind of cognitive ability - intelligence. Free, flexible, original thinking which often deviates from the set patterns does not receive equal respect. Then how can creative potential conform with the criteria employed in selection procedures?

Training for creative thinking has more general importance. It is relevant not only in a systematic study of creativity but also in planning. Remaking of nation is remaking of oneself. The first step of planning for progress is breaking old habits (Ganguli 1967).

Requisites of creative behaviour are requisites of rapid development. The builders of our first big steel plant should have shown some awareness of this fact. The problem of creativity is not only the problem of arts and literature, of scientific investigation and engineering designs, but it is the problem of many faced development.

Aims:

In the present study an attempt is made to ask and answer under our conditions the following questions:
'What are the characteristics of creative thinking', 'what environmental factors facilitate its functioning', 'how well creative individual can be identified', 'what are the adjustment problems of an average creative person', and 'what sort of personality he possesses'.

* * *