CHAPTER I

THE PROBLEM.

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CHAPTER 1

THE PROBLEM

1.1 Introduction

Education is a vital force which is capable of unfolding the latent talents of the educand so that he may contribute the best of his potentiality for the cause of the national progress and human welfare. The educational philosophy and practice of any nation is governed and geared by its political philosophy. The world-wide belief in democracy, conceived of as implying each mans' right to realise his own potential and to share in the building of his own future, and the aim of education as the complete fulfilment of man, in all the richness of his personality, the complexity of his forms of expression and his various commitments as a member of various primary or secondary groups have shifted the frame of reference in education from totalitarian system of education to a democratic one (Edgar Faure et al., UNESCO, 1973, p. vi). In any democratic country, education develops out of the life, needs and aspirations of the people of the nation, (Education Commission, 1964-66) and this is reflected significantly in any developing nation. It is because of this that education which is the most important component of human resources under democratic society is considered as a necessary investment under the assumption that it is the key to yield the greatest return (Durganand Sinha, 1970, p. 8). "Judged solely by the test of future productivity, the community that neglects education is as
imprudent as a community that neglects material accumulation" (Lord Robbins, Higher Education, 1963).

Education is the chief source of raising the 'human capital' which begets scientific revolution and promotes technological advancement. McClelland's (1961) concept of 'Achieving society' as well as Edgar Faure's (UNESCO Report, 1973) concept of 'Learning society', both are solely the product of higher achievement motivation. And modern society of any developing nation has to face the emerging problems in education. The challenge of the modern society is to make the best utilization of all human as well as material resources available in the nation. Only by pooling up all the human resources can a developing nation make desirable progress and attain the ultimate aims of the democratic socialistic pattern of society.

The cultural integration, the scientific excellence, the technological advancement, and the ideological revolutions have out-dated the system of education in all developing democratic countries. Consequently, there is a need for educational reconstruction. The free schooling, the life-long education, the open university, the correspondence course, the informal education, the functional literacy have been conceived of as some of the means of raising the 'human capital' of the developing nation like India. The need of a 'learning society' is to introduce 'learning to be' for 'learning to learn' by employing cybernetic principles in learning with a view to promote learning chemistry among the educands for the optimum
prosperity and progress of the nation. The aim of education in this 'learning society' is to enable man to be himself, to 'become himself' and to promote scientific humanism (Edgar Faure, Learning to be, UNESCO, 1973). Such a system of education has a firm belief in the diversity of talents and pursuits of excellence so that the entire national latent talents could be adequately unfolded, gently nourished, properly promoted, and then fully utilized for the cause of the nation.

"The greatness of a nation may be manifested in many ways - in its purposes, its courage, its moral responsibility, its cultural and scientific eminence, the tenor of its daily life. But ultimately the source of its greatness is in the individuals who constitute the living substance of the nation. .......It is the only form of society that puts at the very top of its agenda the opportunity of the individual to develop his potentialities."


"With effective educational process the human capital is raised more economically. 'Bettering the best' is the invitation of the age and call of the developing nation".

(Sharma, V.P., 1972, p.1).

Though democracy aims at mass education, the constitutional provision# for equal opportunity to all regardless of caste, creed and colour does not deplore the optimum growth and development of each individual in accordance with his psychophysical potentialities. "Equal opportunity for all does not mean nominal equality; the same treatment for every one.... it means making certain that each individual receives a suitable education at a pace and through methods adopted to his particular person." (Learning to be, UNESCO, 1973, 75).
John Gardner (1960, 81) has pointed out that "Our devotion to equality does not ignore the fact that individuals differ greatly in their talents and motivations. It simply asserts that each should be enabled to develop to the full in his own style and to his own limit. Each is worthy of respect as a human being. Herriott (1963, 157) considers human talents as the greatest natural resource. He asserts that "its conservation and development should be, therefore, a primary concern of everyone. When human talent is wasted, everyone is depressed; when it is rightly developed, everyone benefits". It is not gold, but men; the human capital, not the material, which can make the nation great. So the investment on the individuals is the investment on nation; and therefore, the development of the individual is the development of the nation. "Democracy dares not to forego the richest resources of the nation; the valuable human potentialities, since the creation and contribution of each member of the society, in some form or other, has to add, bit by bit, to the national development and social welfare. (Sharma, V.P., 1972). Scientific revolution and technological advancement demand for enriched learning system; and this is how, the present system of education challenges the existing educational processes, and demands for the introduction of educational technology in the class-room so that all children could attain the optimum growth of their potentiality through autospaced learning system. That is why, education at all levels has been permeated in the recent years with a tremendous concern for the adequate identification, promotion and conservation of all kinds of intellectual potential, talents and traits. French (1970) specifies that —
"A democratic society has an obligation to provide opportunities for individuals to develop and use their talents, and the interests of the society require that such opportunities be made attractive. A group achieves its maximum welfare when each member contributes as much as he is able. New technological pressures have sharpened our awareness of our short-sighted failure to identify and develop many of our most promising minds in keeping with their potential. Extra-ordinary talent unchanneled or unevoked is a tremendous waste."

Such feelings have caused educational thinkers to evolve such a system of education for the gifted and the creative children as would meet the requirement of the developing nations, as well as cater to the needs and aspirations of the individual children, and demands of the democratic-achieving-learning society. Such a system of education has to observe not only the individual differences, but also to consider the probable cognitive changes. This is how the educational systems all over the country have to meet the challenge of producing highly efficient, skilled, precisioned cogs for a scientific economy (French, 1964) and scientific humanism (UNESCO, 1973). There is a reciprocal relationship between education and scientific advancement. "Science and technology have never before demonstrated so strikingly the extent of their power and potential. During this second twentieth century, knowledge is making prodigious leap forward". And this boundless change necessitates corresponding change in the educational system (Learning to be, UNESCO, 1973) which should make the maximum use of human talent. Thus "science and technology must become essential components in any educational enterprise". (Learning to be, UNESCO, 1973, 92) to create highly efficient skilled personnel for raising the national human capital.
This need of the achieving-learning-society in a
democratic developing country like India necessitates for
'talent hunt'. Charles K. Brower (1960) has rightly remarked
that - "We look for......many of our less valuable natural
resources. ......our educators, our unions, and our organi-
izations should join in a mammoth talent hunt to uncover the
treasure of brains......which is hiding in unlikely places
all over America".

"Gifted children are the greatest under-achievers in
our schools because their achievement is further below the
limits of their capacity than that of any other group (French,
1966, 320). These gifted under-achievers obviously invite our
attention to the probable causes of retardation in their
scholastic attainment and make us conscious about this challeng-
ing problem of national importance in relation with the progress
and prosperity, growth and development of the nation. It is
really a matter of worth consideration when "a large proportion
of capable students are not doing work commensurate with their
capacities." (Impellizzeri in Miller's Book, 1961). Wolfe
(1954) has rightly submitted that, "in the present international
tug of war, survival itself may depend upon making the most
effective use of the nations intellectual resources".

In this context, what French (1959) has written about
American Gifted under-achievers, could also be applicable for
India. He remarked that, "some children of great intellectual
ability become very productive adults. Many others of equal
potential, however, do not fulfill the promise of their youth
to the satisfaction of either themselves or society. The United States wastes much of its talents, primarily because many of its brightest youth do not secure the education that could enable them to work at levels for which they are potentially qualified. With no less in quality, the number of graduating college seniors could be doubled. Only half of the students with above average ability who graduate from High School enter college; only 35 percent of all High School graduates enter college. Educational Commission (1964-66, 241) commenting on the education of backward children remarked -

"With the rapid expansion of educational facilities, the number of backward children is also increasing. Many of them drop out of schools at one stage or another; either because of their inability to satisfy their academic standards or the boredom or frustration, they fail in the 'pursuit' of academic programme which is unrelated to their needs and interests. Though quite a few of these children manage to enter High School or even college, their performance continues to be very poor".

Durganand Sinha (1970) has high-lighted the problem of talent crisis in India which stands as a measure for the waste of talent in this developing country. The Education Commission (1964-66, 242) has also expressed its deep concern on the issue of waste of talents in India. It has been remarked that, "the group of under-achievers who are not intelligently dull and are at least of average and may even be of superior ability (could become productive adults). The future of such students should be of great concern to a developing country like ours which cannot remain indifferent to this loss of potential man-power within the higher ability range. Several factors - physical, intellectual, emotional and environmental, contribute to the
failure of under-achievers to come up to the level of his talent abilities". This is a challenging problem of national significance in the present system of Indian education. "The value of a nation's intellectual resources (Intellectual capital)—or the total achievement—would be maximized by maximizing the variety of abilities within and among individuals". (French, 1964, 30). India, the developing democratic nation has to evolve 'need-talent' base educational system; and has to plan as to how best the national talent be utilized so that it may preserve its individual, social as well as national significance.

In view of the paramount importance of the gifted under-achievers for the national progress and prosperity, it would be an emerging problem of great significance for the developing country, if the interaction of other under-achievement is studied in relation with psychological correlates.

Education modifies the behavioural traits. Diversification characterizes an essential aspect of secondary school education. The constitution provides for the maximum growth and development of all the individuals with respect to their interests, aptitudes and abilities. The specific abilities play significant role in the achievement of pupils. The individual's characteristic dispositions stand as facilitative or inhibitory factors in attaining the goals. Once the goals are set in, the individual then strives for the realization of their goals. His specific potentialities help him in the attainment of these goals.

Motivation accelerates the attainment of the task.
However, the attainment also depends to a large extent on his general mental ability and other personal attributes. It is not essential that persons of high intellect will always attain proportionately in their academic assignments also. It has been observed that persons having even average intelligence have shown surprisingly high attainments whereas persons of high intelligence have been found to be achieving considerably low scores in their academic subjects.

However, if achievers and under-achievers are considered as persons possessing two different types of general mental abilities in relation to their scholastic achievements, then possession of specific aptitudes, personality dispositions and differential pattern of achievement motivation are also expected from them. Presence of aptitude alone is not sufficient for the optimum success in work. Thus identification of the aptitudes, kind of personality traits and nature and level of achievement motivation of the achievers and under-achievers help in guidance and counselling programme.

What are the basic personality dispositions which cause them to be over-achievers (OA) or under-achievers (UA)? How these personality traits determine their aptitudes and achievement motivation which subsequently, affect their academic performance? This could be an 'ex-post-facto' correlational research where we intend to identify the types of personality traits, the levels of m Ach and kinds of aptitudes which the UA in general possess, and now, and to what extent these are different from those who are said to be OA?
1.2 A Brief Review of Previous Studies.

Educationists have long been perplexed by the poor performance of the pupils with superior mental capacity; and therefore, a rich literature have been made available showing a great concern to under-achievement. Relatively, the concept of over-achievement had been rather confusing and contradictory; consequently, the literature on over-achievement is very meagre. Some comparative literature showing the difference between the OA and UA on different psycho-social variables have been produced; but that too is insignificant. However, in view of the great importance of under-achievement to the cause of national progress, the research on academic under-achievement typically has been insufficient in its findings and inconsistent in its explanations (Hackell and DuBois, 1961; Perterson, 1963; Tiedeman and McArthur, 1956; Thorndike, 1963). Under-achievement has been attributed variously to parental dis-interest, cultural impoverishment, personality maladjustment, teacher inadequacy, and just plain laziness (Raymond Hummel and Norman Sprinthall, 1965). Some social scientists have made it fashionable to justify under-achievement as a symptom of adolescent alienation from absurd conditions in school and society (Friedenberg, 1959, Goodman, 1956). Whatever one's interpretation of its sources, under-achievement is generally recognized to be a serious drain on society's reservoir of talent (McClelland et.al.; 1958; Miller, 1961), and on an individual's chances to realize a sense of worth and fulfillment in an increasingly technological society (French, 1966).
### Table 11

The Dimensionality of Historical Retrospect of the year-wise Abstraction of the Published Literature on the different facets of the OA and UA between 1961 and 1975.

<table>
<thead>
<tr>
<th>Year</th>
<th>Volume</th>
<th>N</th>
<th>%</th>
<th>Separate Literature on OA</th>
<th>Separate Literature on UA</th>
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<tbody>
<tr>
<td>1961</td>
<td>35</td>
<td>3</td>
<td>0.44</td>
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<tr>
<td>1962</td>
<td>36</td>
<td>13</td>
<td>1.89</td>
<td>-</td>
<td>13</td>
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<tr>
<td>1963</td>
<td>37</td>
<td>16</td>
<td>2.33</td>
<td>-</td>
<td>16</td>
</tr>
<tr>
<td>1964</td>
<td>38</td>
<td>19</td>
<td>2.77</td>
<td>1</td>
<td>18</td>
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<tr>
<td>1965</td>
<td>39</td>
<td>38</td>
<td>5.54</td>
<td>2</td>
<td>36</td>
</tr>
<tr>
<td>1966</td>
<td>40</td>
<td>17</td>
<td>2.49</td>
<td>-</td>
<td>17</td>
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<tr>
<td>1967</td>
<td>41</td>
<td>30</td>
<td>4.40</td>
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<td>28</td>
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<tr>
<td>1968</td>
<td>42</td>
<td>48</td>
<td>7.03</td>
<td>3</td>
<td>45</td>
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<tr>
<td>1969</td>
<td>43</td>
<td>69</td>
<td>10.07</td>
<td>4</td>
<td>65</td>
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<tr>
<td>1970</td>
<td>44</td>
<td>88</td>
<td>12.85</td>
<td>5</td>
<td>83</td>
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<tr>
<td>1971</td>
<td>45 and 46</td>
<td>94</td>
<td>13.82</td>
<td>7</td>
<td>87</td>
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<tr>
<td>1972</td>
<td>47 and 48</td>
<td>93</td>
<td>13.34</td>
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<tr>
<td>1973</td>
<td>49 and 50</td>
<td>74</td>
<td>10.81</td>
<td>2</td>
<td>72</td>
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<tr>
<td>1974</td>
<td>51 and 52</td>
<td>47</td>
<td>6.86</td>
<td>2</td>
<td>45</td>
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<tr>
<td>1975</td>
<td>53 and 54</td>
<td>36</td>
<td>5.36</td>
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15 yrs. 20 Vols. 685 100.00 41 644
With a view to diagnose the directionality and dimensionality of the researches conducted on the different facets of over-achievement and under-achievement, a historical retrospect of the last 15 years' abstraction of the published literature in the 'American Psychological Abstract' was systematically recorded and conveniently catalogued. Table I:1 presents the yearwise dimensions of the published research (Figure I:1) whereas Table I:2 exhibits the nature and kind of researches conducted on the OA and UA together with their topical dimensions.

An insightful analysis of the 15 years' abstracted literature (from 1961 to 1975) on the various factors of the OA and UA (Table I:1, Fig. I:1) reveals that there is a sequential tremendous increase in the published literature from 1961 (only 3, 0.44%) onwards to 1971 (94, i.e. 13.72%) which may be said to be a 'boom-period'; and then, there is a gradual decline in the abstraction of the literature; the recorded percentage of abstraction being (36, i.e. 5.26%) in 1975. In 1961, there was no separate classification for the OA or/and UA; and all concerned literature on OA and UA were used to be catalogued under 'Academic Achievement'. In 1963, a separate sub-section of 'Over-and Under-achievement' was introduced, and in view of its great recognition and paramount importance, the sub-section of 'Over-and Under-achievement' was, further separated into 'Over-achievement' and 'Under-achievement'. The directionality and dimensionality of the published literature on the different facets of the 'Over-achievement', as well as on 'Under-achievement' has been presented in Table I:2.
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<td>5. Learning disorder</td>
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<td>3. Guidance and counseling</td>
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<td><strong>5. Affective Factors</strong></td>
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<td>(a) Self-concept</td>
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<td><strong>7. Miscellaneous</strong></td>
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**Total**: 685 100.00
The importance of under-achievement over the over-achievement has been adequately reflected through the abstraction of published literature on UA and OA (Table I:1).

The directionality and dimensionality of published literature presented in Table I:2, reveals that a rich literature is available on academic over-achiever and under-achiever, high-achiever, and low-achiever, achiever and non-achiever. Though all these varieties of academic achievement are not interchangeable; however, under-achiever and over-achiever have been invariably misunderstood respectively for low-achiever and high-achiever or for non-achiever and achiever. In view of the fact that rich literature is available on over- and under-achievers; and the specific dependent variables of the study, no attempt has been made to review the published literature on the high-achiever and low-achiever, or on achiever and non-achiever; however, in view of the relevancy as well as interchangeability of the concepts, some revealing researches even on high- and low-achievers or academic achievers and non-achievers have been reviewed in this section.

The review of relevant literature could be presented under two main headings:


From the point of view of clarity of concepts and coverage of content, they could be further classified as under s:-
1.211 Causes of Under-achievement.
1.212 Problems of Over- and Under-achievement including problems of identification.
1.213 Researches on the different aspects of Over- and Under-achievement.
1.214 Correction of Under-achievement.

Since the published literature in general on the dependent variables has no direct relevance with the topic under-study, the presentation of its review has been deleted.

1.22. A Brief Review of the Relevant Previous Studies on Dependent Variables with special reference to Independent Variables of the Study.

A review of published literature abstracted in the past six years commencing from 1970 to 1975 in the American Psychological Abstract reveals only 84 abstractions; most of them being on under-achievement. On over-achievement, only 26 abstractions in all have appeared. Yearwise directionality and dimensionality of the published literature related to the independent variables have been given below.

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<td>1) Personality:</td>
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<td>a) Self-concept</td>
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<td>b) General Personality Traits</td>
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<td>2) A. Ach</td>
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<td>3) Aptitude</td>
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<td>18</td>
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The dimensionality of published literature on the dependent variables related to the independent variables of this study reveals a general declining tendency. A brief review of some of the researches has been presented, as follows:

1.221 Aptitudes and the Dependent Variables.
1.222 ACh and the Dependent Variables.
1.223 Personality Variables and the Dependent Variables.

1.221 Aptitudes and the Dependent Variables.

The aptitude as an independent variable of the over-achievement or under-achievement or the relationship between the aptitudes of the over- and under-achievers have been very insignificantly studied by the investigators. Only two published literature could be traced from the abstractions in American Psychological Abstract of the aptitudes of the over- and under-achievement. From this point of view, the present study is of paramount importance.

Flanagan, Ronald, L. and Rock Donald, A. (1969) investigated the achievement of college students with the use of an interactive multiple moderator technique to the identification of over- and under-achievers. The predictors were high school rank and the aptitude test; the criterion being first year grade average. Selected background variables were the potential moderators. The OA were characterized as having average aptitude yet coming from backgrounds where the father was highly educated; the under-achievers were observed

1.222 Achievement Motivation and Over-and/or-Under-Achievement.

The studies on \( m \) Ach as a predictor of over- and under-achievement have been found extremely important from the point of cultural upliftment and social welfare; however, the number of researches conducted on \( m \) Ach is not very encouraging.

Achievement motivation has been studied either as a predictor of over- and under-achievement or its relationship has been established with the other related independent variables of the over- and under-achievement.

McClelland's TAT technique or Edward's Personal Preference Inventory or some other objective measure of \( m \) Ach (e.g. Prayag Mehta's AMI) have been used to estimate the level of \( m \) of the Ss. Atkinson (1950), Bending (1957), McClelland (1953, 1961, 1963), Morgan (1952), Weiss Wertheimer and Groesbeck (1960), Uhlinger and Stephens (1960), Prayag Mehta (1968) studied the \( m \) Ach of the Ss of different cultures and found conflicting results. It has been observed that these
instruments do not differentiate between over- and under-achievers.

Under the assumption that \( n \) Ach may be one of potential predictors of academic performance, Prayag Mehta (1968) explored the achievement motives in high school boys by using his Achievement Motivation Inventory validated against the TAT cards of McClelland (1961) and found contradictory results. He concluded that,

"We cannot compare the findings of this study with those of foreign countries because of cultural and environmental differences, but it was seen that the level of \( n \) Ach of our boys was comparable with that of certain educated countries. This study revealed the cultural impact upon achievement motivation; such as higher level of achievement motivation was found in relatively lower socio-economic groups than in the middle income groups. Some relationships was found between certain occupations and achievement motivation. The study also showed positive correlation between \( n \) Ach and educational achievement; but it was low. Therefore the contribution to educational achievement could neither be proved nor disproved."

Sinha, B.P. (1970) found low correlation between \( n \) achievement and educational accomplishment. He also found higher scores of the boys on \( n \) Ach than that of the girls which is contrary to the study conducted by Sharma, K.L. (1972). Terman, L.M. and M.M. Oden (1947) evaluated the level of \( n \) Ach of the students on TAT cards by analyzing the stories written by them and found that the high achieving boys scored somewhat higher than the others, but the difference was small. They obtained conflicting results on girl Ss of grade X and XII; and led to the conclusion that the instrument did not discriminate between the girl Ss of different grades. Mitchell (1961) made a factor analysis of the inter-correlation of several measures of \( n \) Ach and residual grade point average whereas Myers (1964)
using an objective test of n Ach found the correlation with grade point average of high school students to be .50 and .48 for male and female respectively which was fairly comparable with .51 found by McClelland et al. (1953) using TAT pictures. McClelland et al. (1962) have shown that the "people with high n Ach score show evidence of better learning and performance. ......There is definite and statistically significant evidence for superior learning is high as compared with low n Ach group". They interpreted that the students with high achievement need, tended to regard their academic achievement as a challenge and thus became more ego-oriented attaining a maximum level of aspiration.

Laxmi, S. (1970) studied the relationship between the rate of learning and achievement motivation among the high school boys and found a significant difference between the mean n Ach scores of the fast learners and slow learners; and inferred that the fast learner on average secured positive scores for n Ach motive.

Dave, N.P. (1970, p.13) investigated n Ach in relation with risk taking in kindergarten children and found that individuals with high n Ach chose a task which was moderately different and offered neither very high nor very low reward in return of his efforts. According to this Ss who wanted to maximize success concentrated their efforts at the middle distance whereas those who wanted to minimize failure prepared either difficult or easy distance.
Dhaliwal, A.S. (1971), Trend, and Medoker (1968), Frymier, J.R. (1964) and Bharat Lal (1973) worked on different aspects of \( \text{\text{\text{\text{n}}}} \) Ach. Bharat Lal (1973) made a comparative study of the level of \( \text{\text{\text{\text{n}}}} \) Ach of the over- and under-achievers, whereas Frymier, J.R. (1964) studied the students' \( \text{\text{\text{\text{n}}}} \) Ach from the point of view of their academic excellence in school. Dhaliwal, A.S. (1971) studied \( \text{\text{\text{\text{n}}}} \) Ach as a non-intellective predictor of scholastic attainment whereas Trend and Medoker (1968) investigated the level of achievement motivation of the under-achievers after their high school career and reported them as persons of 'low-achievement motivation'. Muthaya (1964) and Sinha, D.N. (1970) studied the level of achievement motivation of the high and low-achievers. Muthaya (1964) investigated the frustration reaction and achievement motives of 30 high and 30 low-achievers using the picture-frustration technique and found extra-punitive and in-punitive sections more predominant among high and low-achievers respectively. With regard to the type of reaction, obstacle dominance and need persistence were the characteristics of high-achievers whereas ego-defensive reaction was more predominant among low-achievers. The high-achievers have shown significantly higher achievement needs than the low-achievers on McClelland's technique of TAT cards. Sinha, D.N. (1970) reported, 'Strong drive and motivation, greater persistence, goals clearly defined desire for status and recognition as means of acceptance by other as characteristic differentials of the high-achievers whereas the low-achievers displayed weak and segmental motivation; fantasy and unrealistic
aspiration, desire for approval and acceptance by others through good conduct instead of through achievement as their motivational traits.

Irelan (1968) studied the low-income life styles and pointed out the importance of instruction in \( n \) Ach to parents and pupils with a view to improve their academic performance. Shrivastava, P.K. and Tiwari, M.L. (1967) investigated that the effect of socio-economic stratification on \( n \) Ach scores of the middle class was the highest. The level of \( n \) Ach of the upper class was in midway and the \( n \) Ach scores of lower group was the lowest. No difference between the means of the different group except between middle and lower, was found significant. They concluded that the \( n \) Ach of the middle class boys was the highest which is contrary to the result reported by Prayag Mehta (1968). The effect of sex, culture, and religious variables on \( n \) Ach was studied by Pandey and Singh (1971) who reported that the students who had high \( n \) Ach also had high scores in their academic performance; however, neither \( n \) Ach nor school performance was affected by religious beliefs and practices.

Mead, O. Robert and Labh Singh (1970) conducted a study to show the relationship between achievement motivation and psychological time and inferred that high motivation group estimated time to be shorter than the low motivation group. Further, the fast group estimated time shorter than the slow progress group. They have shown that the students who have high need achievement estimated time as shorter for rapid progress than they do for slow progress,
while Ss with low need achievement showed no such effect on the time estimates. Mead and Singh (1966, 13) generalized from this study conforming with the views of McClelland (1961) that, "... concern with the value of time is a feature of high-achieving individuals and cultures. For those less concerned achievement, time is not so critical and may be completely unimportant".

Gupta, Vedprakash (1971) investigated the relationship between personality, motivation and persistence on physical task whereas Muthaya and Rejeshwari (1969) studied the relationship between personal aspiration and $n$ Ach. The former researcher concluded that motivation has a great influence on persistence on physical tasks while the latter inferred that no significant relationship existed between personal aspiration and achievement motives. Another finding was that the high and low groups in $n$ Ach did not differ significantly in each of the four variables i.e. contented life, educational achievement, sociability and economic status; which confirms the results obtained by Atkinson (1950), Bending (1957), McClelland (1953, 1961, 1963), Morgan (1952), Weiss Wertheime and Groesbeck (1960), and Uhlinger and Stephens (1960).

Lesser, Gerald, S., Krawitz Rhoda, N.; and Packard, Rita (1963), Prayag Menta (1968), Turner, Harry (1972), Biggs, Barbara, E. and Felton, Gary (1973), and Lane, Myrna, E. (1971) studied the therapeutic aspect of improving the $n$ Ach among the over-achivers and under-achievers. Lesser, Gerald, S.
et al. (1963) made experimental studies of the arousal of \( \text{n Ach} \) in adolescent girls whereas Biggs, Barbara, E. and Felton, Gary (1973) organized programme to emphasize the clinical use of systematic desensitization to stressful situations for the reduction of test anxiety of the academic low-achievers; and reported significant difference between the means of the pre-and post-test performance on Mandler-Sarason Test - Anxiety Questionnaire (TAQ). Difference for male Ss between pre-and post-test was not found significant; however, the female Ss showed significant differences. The reduction of high anxiety among high anxious Ss was found significant, but it was not significant among low anxious Ss. Runner, Hay (1972) also designed an experiment to alter \( \text{n Ach} \) in low-achieving male adolescents by teaching the game of chess and conformed with the results of Biggs, Barbara and Felton Gary (1973).

Lane, Myrna, E. (1971) conducted an experiment to study the therapy outcomes in relation with \( \text{n Ach} \) and scholastic accomplishment. Prayag Mehta (1968) designed experiments to develop achievement motivation among teachers and pupils through training programme and reported that the experimental group excelled the control group in the post-performance on \( \text{n Ach} \). Hartman, Robert, D. (1969) devised an assessment technique of a programme for exceptional under-achievers and proposed for adequate socialization, increased \( \text{n Ach} \), improved self-concept, and placement in outside services in accordance with the need as measures of improving the under-achievement.
Among the non-intellectual factors, personality variables have been studied very extensively (Tables I:1 and I:2). Since academic accomplishment has been related with a number of terms showing intra-variable variations, most of them have been interchanged for want of specific research definitions (Shaw, 1961). For instance, over-achiever has been used for high-achiever, or simply achiever, whereas, under-achiever has been inter-changed for low-achiever, non-achiever or for vulnerable child (Wills, I.H., 1969). Further, in the study of personality variables in relation with different types of academic achievers, some contradictory results have been observed because of application of varied types of personality techniques. Bhatnagar, R.P. (1967) has reviewed the literature on 'personality correlates of academic achievement and commented upon the validity and reliability of the tools, designs and sampling techniques employed in the studies of personality correlates'.

Abraham, P.A. (1969) and Bhatnagar, R.P. (1967) studied the personality traits as predictors of academic achievement of secondary school pupils in general. The latter (1967) reported that need for achievement, autonomy, inter-action, succorance, dominance, nurturance, endurance and aggression were found to be positively correlated whereas need for deference, affiliation and abasement were negatively
correlated to academic achievement. Abraham (1969) made a factor analysis of the personality variable and reported the predictability of personality variables of academic achievement in terms of factor loadings.

1.2231 Personality Variables of High- and Low-Achievers.

Joyce, John, F. (1970) investigated some personality characteristics of achieving high school students from lower socio-economic environments whereas Bailey, Roger, C. (1971) investigated the differences in self-concepts of the low- and high-achieving students. The latter reported that, 'the achieving Ss had (a) higher self-ratings on college ability, (b) higher desired levels of college ability, (c) smaller discrepancies between perceived and wished for levels of college ability, and (d) smaller discrepancies between their perceived and actual level of college ability than the under-achieving Ss.' They inferred from these results that, 'student's self perception of his academic ability plays a crucial role in his academic performance'.

Terman, L.M. and M.H. Oden (1947) measured adjustment by California Psychological Inventory and found that the high achievers displayed better adjustment than the low achievers. The ratings of peers and teachers confirmed that the high achievers had greater qualities of leadership and were less aggressive. This conformity of consistency of finding that the high achievers tend to be better adjusted has been
confirmed on all three methods. They also concluded on the basis of the interviews with the students that high-achieving students tended to be more scholastically ambitious, identified themselves with an adult of the same sex who valued education, and were more positive toward school-related activities.

According to Elizabeth Drews (1963), the high-achievers are grade-oriented 'Protestant Ethic' who are conformists, school-activities oriented, and education is an instrument in achieving their goal. Among school-year interests, recreation rated lowest and school subjects proved very popular. These studious boys prefer maths. and science to the humanities. In their future lives, they want to be hard working and conscientious, to help others, and to live by rules. They will be excellent employees. They are punctual and not a little punctilious. They are conformist and are concerned with ideas.

Ernest Haggard (1937) conducted an investigation on 'Socialisation, personality and academic achievement in gifted children' and collected developmental personality norms in terms of grade, sex, subject like reading ability and arithmetic. It has been remarked by them that the high-achievers in arithmetic showed a cluster of personality and intellectual characteristics. They include a healthy ego, which is relatively free from conflicts and anxieties; ability to act independently and get along well with others; and such intellectual qualities as creativity, flexibility, and the
ability to deal hardily with abstract symbols and relationships. He concluded that 'the best way to produce clear thinking is to help children develop into anxiety-free emotionally healthy individuals who are also trained to master a variety of intellectual tasks.

The Reports on the 'Gifted Child in Portland School Districts conducted under Portland, Oregon Public Schools Research Program (1959) revealed that:

"High-achievers characterized themselves as more accomplishing and studious and less lazy than did under-achievers and indicated greater personal competitiveness. Under-achievers more often than high-achievers viewed academic achievement as incompatible with enjoying life and having fun being well rounded and well adjusted, being friendly and free of smugness, and having a good personality".

"Analysis of the creative thinking abilities and work habits of the two groups indicated that high-achievers do not differ from under-achievers in originality, but many more high achievers showed superior ideational fluency. More high-achievers appeared to favor a work approach which emphasized planning, carefulness, and perseverance than did under-achievers."

"Under this research programme, the differences between the high-achievers and under-achievers were studied from the points of view of attitude towards school, teachers and culture, interest and activities, career outlook, family relationship. The personal and social adjustment of the high-achievers and under-achievers were also studied, which reveal that substantially more under-achievers than high-achievers were somewhat unstable. Under-achievers were more often restless, impetuous, daring and mischievous and not dependable.

As far as social adjustment is concerned, under-achievers were a little more active and satisfied with their relationships with girls, but high and under-achievers did not differ in the extent of their social relationships with other boys. The high and under-achievers appeared to conceive of themselves as equally cooperative in their relationship with others.
In describing the immediate group of friends with which they spent the most time, under-achievers significantly more often than the high-achievers described their cliques as negative toward school achievement, as excitement seeking and restless, as having a generally negative attitude and manner toward authority and as violating adult laws and standards.

Hagan, Robers and Weiss, Daniel, S. (1974) studied the personality correlates as predictors of superior academic achievement on Phi-Beta-Kappa and non-Phi-Beta Kappa Ss. On CPI, significant differences were found between groups on all comparisons except one. Phi-Beta-Kappa Ss had higher scores for responsibility, socialization and self-control compared with the two other groups. The non-Phi-Beta-Kappa high-achievers were characterized by conscientiousness, industry and dependability. Phi-Beta-Kappa Ss were not particularly interested in ideas or cultural pursuits, not particularly tolerant, or emphatic, but were stable, pragmatic and task-oriented.

Impellizzeri (1961) reported that low-achieving bright youth was associated with the problems of learning disorders; about 30% of the Ss with poor motivation and poor conditioning but without any serious psychopathology; 10% with acute situational reactions such as illness, problems with teachers and so on; 50% with relatively serious chronic neurotic problems; and 10% with serious problems such as depression, promiscuity, and delinquent behaviour requiring immediate attention. Among the high achieving group, 30% presented some serious emotional problems.

Ahluwalia, S.P. and Narang, S.A. (1967) studied some of the personality characteristics of good and poor
achievers, Sinha (1970) and Jenson (1958) investigated the differential personality traits of the achievers and non-achievers while Muthaya (1962, 1964), Mishra (1962); Sinha and Mishra (1961 a, 1961 b, 1961 c), conducted researches on the personality traits as predictors of academic achievement of high-and low-achievers. Mishra (1962) tried to investigate whether and to what extent the non-intellectual and personality factors enabled one to discriminate between the high-and low-achievers in engineering education, and concluded that the two striking features of the analysis of discrimination are: (1) intelligence test score does not discriminate the high-and low-achievers in engineering whereas (2) the scores of neurosis, emotional balance and anxiety do discriminate them. Eysenck (1953) has pointed out that 'successful student is persistent, emotionally stable and has level of aspiration not far too removed from reality, the unsuccessful student of similar intelligence lacks persistence, is unstable, and his levels of aspiration are unreasonably high or low. On self-image of the achievers and non-achievers, Sinha, D. (1970) has reported that the high-achievers tend to underestimate his positive qualities, and are more self-critical, whereas the non-achievers over-estimate their positive qualities, and are less self-critical.

Personality Variables of Over-and Under-achievers.

The researches on personality variables in relation
to dependent variables have been primarily conducted on the following three dimensions:

(a) Self-concept,
(b) Intellectual factors,
(c) Personality (non-intellectual) factors.

Gough (1949), Lichman (1954), Shaw and Brown (1957) and New York city Talent Preservation Project (1959) studied the problems of adjustment of the under-achievers and conflicting results have been obtained. Nason (1958), Portland Public Schools Project (1957), and Shaw, Edson and Bell (1960) investigated the self-concept of the under-achievers and reported negative self-concept towards their self as well as towards others. This finding has been supported by Ohleen and Proff (1960), Shaw and Brown (1957), and Shaw and Grubb (1958) who reported that under-achievers showed higher degree of hostility than over-achievers through attitude of distrust, lack of faith in others etc. Further, in support of the above result, Kurtz and Swenson (1951) have found that the under-achievers display stronger feeling of inferiority whereas Shaw and Black (1960) have remarked that the UA showed stronger ego-defenses through different ego-defense mechanism e.g. rationalization etc. Nason (1958) and Rizler (1960) have showed that the UA have difficult time in working for distant goals while Altus (1948) and Burgess (1956) have found that the UA were less matched and display poor achievement imagery and lack of self discipline.
Self-concept and Over- and Under-achievement.

Shaw (1961) conducted an extensive investigation of bright under-achievers with I.Q.s of 115+ in grades IV, VII and X and recorded that the under-achiever's exhibited a greater negative self-concept and a generally more negative outlook on life. Overt expressions of aggression and hostility were greater among the under-achievers. The over-achievers apparently experienced feelings of hostility, but tended to suppress them. Under-achievers tended to have general feelings of inadequacy, which were lacking among the over-achievers.

Shaw and Brown (1960) pointed out that over-achievers are conformist and they display high value to concept of imagination whereas the under-achievers are non-conformists and possess low value to concept of imagination. Pierce (1960) confirmed this finding.

students' abilities, aspirations, expectations and motivation. Kearney, Robert, J.(1971) studied the Erikson's concept of Epignesis whereas Thompson, Carolyn, S. (1970) investigated the effect of selected painting experiences on the self-concept, visual expression and academic achievement of elementary grade under-achievers. Devane, James, R.(1973) made an exploratory study of the relationship between factors of self-concept and over- and under-achievement in arithmetic whereas Passi, B.K. and Lalithamma, M.S. (1973) studied self-concept and creativity of over-and under-achievers. They did not find significant difference in the self-concept of the over-and under-achievers. Henderson, Edmund, H. and Lond, Barbara, H. (1971) studied the personal-social correlates of academic success among disadvantaged school beginners and found that social self-concept and teachers' rating differentiated the groups. Roaden showed greater realism for size but less preference for father, minority identification, social dependability and identification with patents. Item analysis of the behaviour ratings confirmed these differences and suggested social withdrawal for the repeaters; an over-dependency for the promoted non-readers, and a realistic mature independence for the readers.

(b) Intellectual Factors and Over- and Under-achievement.

Crandall, Virginia, C., and Lacey, Beth, W. studied the children's perceptions of internal-external control in intellectual-academic situations and then embedded Figure Test
performance. They reported that internal-external perceptions were related with three performance measures on the Witkin Embedded figure relations. Prediction was reduced for males, but remained at significant level for females. Although internal females committed as many errors as external females, they were able to identify more figures correctly and in less time than their external peers.

Rychlak, Joseph, F. and Tobin, Thomas, J. studied the order effects in the affective learning styles of over- and under-achievers. They pointed out that the OA showed the least disparity between their positive and negative reinforcement value, while the under-achievers showed the greatest reinforcement value effect.

A series of researches over a period of four years conducted at the University of Oklahoma (1952) revealed that an over-achiever is characteristically more self aware and nothing to take responsibility while the under-achievers are guided by mutually contradictory motives and is not aware of their conflicting nature. It was inferred from these findings that intellectual variables can function effectively only when the personality function is properly integrated.

Murakawa, Noriko (1968) conducted research on the intellectual ability of under-achievers and showed that the under-achievers are low in abstract thinking and their concept is concrete, personal and empirical while achievers concept is abstract, impersonal, and general. The under-achievers tend
solve problems by the trial and error method based on their sensory impression, therefore, using their spatial and perceptual ability for solving complicated problems. Achievers tend to use their reasoning ability for problem solving with hypothetic deductive attitude.

Pandey, R.C. (1974) investigated the intellectual characteristics of successful drop-out and probationary black and white university students. Analysis of variance did not yield significant student-status effects over the three tests, but a significant interaction of race and student status was found for verbal comprehension scores. Whites did not differ over status categories, but there was a significant difference in favour of the black good students compared with those on probation. Black drop-outs performed as well as black good students.

Eisenman, Russell et al. (1968) studied creative talents of the under-achievers and reported that neither the intelligent, nor the creative students fared well academically, and suggested that research on under-achievement should take into consideration the fact that the under-achieving Ss may contain a disproportionate high intellectual ability.

(c) Personality (non-intellectual) Variables of Over- and Under-achievers.


Rater, Henry, H. (1973) uncovered the differential personality traits of the under-and over-achievers and found that over-achievers had higher scores in anxiety and in fantasized achievement. Rao, S.N. (1963 b) showed that the over-achievers tend to differ significantly from both normal and under-achievers and revealed optimum adjustment to academic situations. Cash (1962) studied the relationship of personality traits with the academic achievement and found that scholastic attainment is related to neurotic tendency, self-sufficiency; and preparation for the success. O'Shea, Arthur, J. (1968) and Liddicoat, James, P. (1972), Schwale, Francis, J. (1969) studied the differential personality profiles of the over-and under-achievers whereas Watts, Davis, B. (1970) investigated some of the revealing social characteristics affecting the over-and under-achievement. Rosner, Stanley, L. (1969) investigated certain aspects of self-related concept and personality of achieving and under-achieving readers and
their mothers. Shah, M.C. (1961) established the relationship of selected personality factors in high ability under-achieving school children whereas Riggs, Robert, O. (1970) studied the non-intellective characteristics associated with differential levels of academic over- and under-achievement. Lacher, Maury (1971) conducted research on the life styles of under-achieving and over-achieving college students, whereas Bennett, Charlotte, S. (1970) investigated the relationship between selected personality variables and improvement in academic achievement for under-achieving eighth grade boys in a residential school.

Dudek, S.Z. and Lester, E.P. (1968) demonstrated characteristic pattern of cognitive development among the chronic under-achievers and found that:

"they had low digit span, weak motivation, and poor conceptual thinking ability, poor learning skills, and weak in arithmetic and information. Retreat into passivity, compliance, reaction formation, and depression as the characteristic 'good child persona.........Presenting obsessive - compulsive personality with depression, oral aggressive content, perceives his father as weak and passive."

Nakamura, Masao (1968) traced a developmental study of personality traits in over-achievers and reported that 12 academic traits which were correlated with OA were classified into three adjustment patterns; individual, social and emotional. He also identified four developmental patterns.

P. and Winterbottom (1970) found out the personality characteristics of college students on academic probation.
and showed that probation students have unrealistically optimistic expectations concerning grades, attribute their difficulties to academic factors rather than personal concerns, and tend to be defensive, lacking in positive motivation for academic work and relatively dependent upon their parents. Students most likely to get off probation estimated their grades most accurately and had lowest test anxiety.

Pandey, R.C. (1972) used MMPI and by analysis of variance technique, uncovered significant effects for Hypochondriasis, Hypomania, Masculinity and Femininity, Social, Lie and Validity scales. Drop-outs showed greater disturbances of personality.

Robbins, Joyd, C. and Calder, Colleen (1975) experimentally studied the academic over- and under-achievement in relation with situational stress and problem solving flexibility and found that for persons with feelings of personal inadequacy, increases in situational stress result in decreased problem solving flexibility, but for persons with feeling of personal adequacy such increases enhance their problem solving flexibility.

Friedland, Jothan (1973) and Beyer, Darrell, E. (1972) investigated the problems of intellectual and non-intellectual factors as predictors of over-achievement and under-achievement and suggested differential diagnosis for the academic improvement.
A Brief Review of Previous Studies on Dependent Variable (i.e., Scholastic Attainment) as related to General Mental Ability as the Criterion Variable.

Researchers have given preponderance considerations to the problem of relationship between mental ability and scholastic performance; and controversial results have been obtained. This may be because of the fact that intelligence has been differentially defined by different psychologists; as well as the factors that a specific scholastic performance contains also differ. Perhaps, non-intellectual factors may play a significant role in academic achievement; and this led to the investigation of factors other than intelligence that may influence scholastic attainment of the pupils.

Positive relationship between intelligence and academic performance has been established in the following studies:
Fordan (1923); Mcphail (1923); Thurstone (1925); Toops (1926); Edds and McCall (1933); Burt (1939); Ormiston (1939); Hartson and Sporto (1941); Durflinger (1943); Shivaramayya (1947); Lennon (1950); McClelland (1952); Derrider (1953); Kemp (1955); Srivastava (1955); Frost and Brandes (1956); Bhargava (1957); Parekh (1957); Misra, Das and Padhi (1960); Padhi (1960); Satsangi (1960); Baker (1961); Bhojak (1961); Kapoor (1961); Sharma (1961); Butcher, Ainsworth and Nesbitt (1963); Rao (1963); Rosengarten (1965); Verma et.al. (1966); Ainsworth (1966); Raina (1967); Hyday (1968); Rao (1967); Rao (1968); Thambankar (1968); Deb (1969); Gupta and Kapoor (1969); Sultana (1969); Naidu and Aaron (1969).
Contrary to above, low relationship between intelligence and academic achievement has also been found in the studies conducted by Harris (1931), Engel (1934), Thomson (1934), Spimelle and Nemzak (1944), and others. Carroll (1943) concluded that, "the bond between mental ability and academic achievement appears to be smaller than is usually assumed". He believes that, "the observed relation rests upon the fact that verbal ability is involved both in the tests of intelligence and scholastic performance. Thus sizable number of investigations reveal that high ability does not by itself ensure success". Annene Rao (1953) found in her study of American students that beyond a certain level, intelligence is a poor indicator of academic success. Cooling and Holly (1927), O'brien (1928), Young (1936), Rupp and Kirkpatrick (1940), Muthaya (1965), Gupta (1967) found no relationship between intelligence and academic accomplishment. Coble (1941) and Ames (1943) reported that high scholastic achievement was not related to intelligence. Crano Kenney and Campbel (1973), on the basis of their research, conducted on pupils of grades IV and V found that in the case of sub-urban schools, achievement in school subjects and the development of abstract abilities caused the acquisition of concrete mental skills. Among the urban pupils, contrary results were obtained.

A critical review of the controversial relationship between mental ability and scholastic performance suggests that factors other than intelligence which may not be within the control of the investigator, can significantly influence
the scholastic accomplishment of the pupils. Pointing out the significant impact of socio-economic status on scholastic performance, McClelland (1952) suggested that, "mental ability may function as threshold type of variable with respect to academic achievement. There is a certain minimal level of mental ability which may be required to achieve in school. Beyond this point, however, the obtained correlations between intelligence and achievement may be due to uncontrolled variety of factors, such as socio-economic status".

Different explanations have been given in support of their nature of relationship between mental ability and scholastic performance. Vineyard and Massey (1957) and Rao (1963) reported that linguistic and verbal factors influence the relationship while personality and non-intellectual factors were found affecting the relationship according to Murphy (1949), Monroe (1945), Harrison (1967) and Barch (1946). Similar conclusions have been drawn by Kahn and Singer (1949), Humphreys and Bayton (1952), who emphasized that intelligence is not the only factor which determines the scholastic attainment. Jastak (1952) has also pointed out that, "success and failure are functions of the whole organism of which intelligence is only a part function; therefore, it does not by itself guarantee success".

While reviewing the studies about general mental ability as a predictor of college success, Douglass (1931); Kinney (1932); Segel (1934); Wagner (1934) and Garrett (1949) indicated that
correlation between them ranged from .24 to .50 (Rao, 1967; p. 13).

Segal (1934) pointed out that in about 80% of cases the correlation ranged between .35 and .54. Eysenck (1947) obtained it to share from .50 to .60; Lanttit (1947) .10 to .60; Pinter (1948) .28 to .60; Aaron .25 to .65; Fraenlich and Hoyt (1959) estimated indices of correlation from .30 to .80.

In this regard, Crawford and Burnham (1946) has rightly pointed out that, if we take .50 as the average correlation, 25% of the variance in academic achievement is explained by intelligence and 75% of the unexplained variance is due to factors other than intelligence. They hold that while "intelligence is certainly a significant factor in academic achievement, it is not the only factor and intelligence tests alone are not adequate to predict academic success".

Rao (1967) concluded that, "the problem of the prediction of academic achievement cannot be handled by exclusive devotion to assessments of individual mental ability and that predictive measures may be advanced with a fairer prospect of success if we attend to and investigate student's adjustmental patterns". According to him, "under-achievement is not caused by the mere lack of ability and that it is precipitated by adjustmental and personality factors to a large extent".

However, it would be illogical if we conclude that
Scholastic attainment is not at all related with general mental ability; and therefore, it would be rather rational to think that a certain level of general mental ability is absolutely essential for an effective functioning of academic performance; but it should not be considered to be the one contributory factor (Rao, 1967). And this conforms with the conclusion given by Vidhu Mohan (1972) who emphasized that, "The imperfect nature of the correlations between intelligence and academic achievement, ranging between .20 and .60 as reported by Stead (1925), Qotes (1929), Lindgren and Guredes (1963) and Madan (1967) left much scope for explanations other than intelligence to account for academic success".

Rao (1967) has emphasized that it is fundamental to any adjustment process, academic or otherwise to think of a certain amount of general mental ability for any scholastic performance. But any increment in ability need not necessarily be related to increments in performance or achievement because the latter may be an outcome of the interplay of several non-intellectual factors like attitudes, aspiration, interests, motivation, skills, mental and physical health, etc. Thus, it is concluded from the above discussion that a certain level of general mental ability is absolutely essential for the proper functioning of scholastic accomplishment; but the level of proficiency in scholastic performance could be an outcome of many factors other than intelligence uncontrollable by the researcher.
Appraisal of Previous Studies.

The brief review of the previous studies on the criterion as well as the independent variables in relation with the dependent variables indicates the trend of researches on over- and under-achievement. The tabular presentation as well as the description and discussion of the literature cited earlier reveal that the researchers have given the greatest importance to the correction and prevention of under-achievement. The recognition in second priority has been attached to the study of non-intellectual variables which include personality variables including self-concept, values, interests and such other psychological constructs. Among the cognitive variables, the general mental ability of the OA and UA could also catch the attention of the researchers relatively more than the other components like perception, thinking, reasoning, aptitude etc. of the cognitive domain. So far as the general mental ability as a predictor of scholastic attainment is concerned, in spite of controversial relationships, it has been concluded that intelligence is not the only factor that attributes entirely to scholastic performance. In addition, other factors, like socio-economic status, verbal excellence, and other non-intellectual factors significantly contribute to scholastic performance. Rather, the nature and level of scholastic attainment reflects the amount of general mental ability needed for a specific course-content.
Despite the rich literature on some psychological aspects of the independent variables in relation with guidance and counselling (20%), non-intellectual (17.69%) and affective factors (14.46%), problem of identification and criteria development (11.09%) as well as causal factors (12.81%), some essential psychological correlates of the OA and UA have not yet caught the attention of the researchers. Though personality as non-cognitive factor has been given considerable attention; however, the socialization process as one of the significant determinants of personality traits has not been given priority in study of the OA and UA. The development of traits of personality depends largely on the socio-cultural determinants; and therefore, in spite of rich literature on personality correlates, there is sufficient cause to study the personality traits of the OA and UA on different socio-cultural settings. Do the OA and UA possess the same personality traits; or could there be some difference in the traits of personality when the socio-cultural frame of reference is changed? In this respect, study of certain traits of personality of the OA and UA under the local social-cultural setting constitutes an important area of study. Further, the study of different aspects, types and traits of personality studied by different investigators using different approaches, instruments and techniques has presented diverse findings and alarming differences in results. Since personality covers a large sample of behaviour, heterogeneity in approach,
content, instruments, findings are quite obvious. Consequently, there is much room to investigate the types of personality traits of the OA and UA on such an instrument which has been hardly used. In this regard, Cattell's classification of 14 bipolar broad types of personality traits could be one of the areas of exploration. Since hardly any study of the types of personality traits of the OA and UA has been available on this typical inventory measuring 14 bipolar personality types, it may be possible to identify some new traits of personality of the OA and UA which have remained unexplored. Thus, certain traits of personality measurable from Cattell's HSPQ constitute an important aspect of study.

Secondly, the review of literature cited above reveals that very few researches have been conducted on aptitudes in general as predictors of the OA and UA. The available researches do not indicate into which aptitudes could be considered as predictors of the OA and UA. It is, therefore, essential to spell out the nature and kind of some of the important aptitudes which have a direct bearing upon the academic excellence of the OA and UA; and which could predict the general over- and under-achievement. From the point of view of educational, vocational and personal guidance and counselling, considerable importance could be attached to the identification of some specific aptitudes as predictors of the OA and UA. It is, therefore, worthwhile to pick up certain specific aptitudes, like reasoning, numerical, verbal, scientific etc. and study their bearings as predictors of the
OA and UA.

Thirdly, numerous studies have been conducted, as revealed by the survey of relevant previous studies on $n$ Ach of the OA and UA; and there appears to be considerable conformity in the findings. However, hardly any study on $n$ Ach of the OA and UA is available which shows its relationship with two of the important independent variables mentioned above; e.g. the personality traits and aptitudes of the OA and UA. Saying that the OA possess higher $n$ Ach does not exactly tell us so meaningfully, as to associate the achievement motivation with the traits of personality and types of aptitudes. What traits of personality and what types of aptitude do the pupils of higher $n$ Ach possess who may be characterized as over-achievers; and how does this relationship hold for the under-achievers?

1.30 Objectives of the Study.

In view of the limitations in the relevant literature as pointed out above, it is essential to identify the specific aptitudes, certain personality traits and achievement motivation of the academic over-and under-achievers, and to study their inter-relationship. The study has a predictive value and functional utility in guidance and counselling of the OA and UA; and has a direct bearing upon the educational diagnosis, as well as vocational prognosis of the OA and UA. This study may certainly add to the available literature on over-and under-achievement.
Although intellectual ability considerably affects one's academic achievements, yet research studies have shown that many students with intelligence considered sufficient for the academic success have failed or have achieved at a level below their ability (Centi, 1962). This indicates that factors other than the intellectual one's operate in one's academic achievement and aptitudes, personality and achievement motivation may be some of them (Tyler, 1956). Significant differences have been found between high and low achievers in respect of psychological factors (Sinha, D., 1970, Impellizzeri, 1961). In spite of the acceptance of differences in aptitude, personality and achievement motivation and other related factors that influence the scholastic attainments, not much research has been conducted in this area. The need for more systematic studies in this field has become more imperative because of the influx of child population into schools, coming from different environments.

The present study concerns itself with the academic over-achievers and under-achievers among intellectually normal and even superior students. The present study is significant in the sense that it involves such variables as aptitudes, personality traits and $Ach$ of academically OA and UA. These are some of the most important factors which can have a direct bearing on the achievement of the pupils. Each of these factors have been considered either individually or collectively in the present study. This might prove helpful
in reducing the incidence of under-achievement which is a problem before the present generation. The overall aim of the study is to reduce the extent of under-achievement in general by means of unfolding their aptitudes, personality traits and achievement motivation.

The main object of the study is to find out the levels of aptitudes, personality traits and \( n \) Ach of OA and UA. It is assumed if a student has suitable aptitude for a specific stream of studies or desirable personality traits or higher level of \( n \) Ach working in the organism for a certain academic accomplishment he should decidedly be better in his level of performance than those not having these attributes. It is also assumed that undesirable aptitudes, personality traits and lower level of achievement motivation are likely to have poor academic achievement. There is no surprise. But if the level of intelligence of both OA and UA is not significantly different, in other words if both the OA and UA belong to the same range of intelligence, then the underlying factors like aptitudes, personality traits and achievement motivation increase or decrease the scholastic achievement. It may be revealing to record that if the general mental ability of the Ss classified under OA and UA is a criterion variable, then could we assume that the non-intellectual factors play significant role in predicting the scholastic performance? If the OA and UA is identified on the strength of their intelligence then it may be possible to design such
a study of identification of non-intellectual predictors of the scholastic performance. If by some means we can find out the differences in aptitudes, personality traits and achievement motivation of OA and UA, we can decrease under-achievement and a large number of students can grow and develop according to their capabilities. Consequently this may help in the progress of the country.

The objectives of the study could be more explicitly presented as follows:

(i) To identify certain traits of personality, to diagnose some specific aptitudes and to measure the level of n Ach as predictors of the over-and under-achievement.

(ii) To identify similarity and differences in traits of personality, aptitudes and n Ach of the OA and UA.

(iii) To study the interactions of the independent variables, e.g. personality traits, aptitudes and n Ach upon the OA and UA.

(iv) To rank order the contributory independent variables as predictors of the OA and UA; and to study their relative importance.

(v) To study the pattern of inter-relationships among the traits of personality, aptitudes and n Ach of the OA and UA.

1.4 Statement of the Problem.

The review of relevant previous studies and the
subsequent objectives of the study developed out of its limitations indicate that diagnosis of the typical traits of personality, identification of the specific aptitudes and measurement of the level of \( n \) Ach of the OA and UA could be a meaningful problem which may add to the literature of over- and under-achievement.

This concurrent correlational research having a base on some psychological correlates as predictors of academic performance would explore the traits of personality, specific aptitudes and level of \( n \) Ach of OA and UA. Under the assumption that the OA must be having some different traits of personality, and different level of \( n \) Ach from the UA. And if so, what is the nature of these psychological constructs? To what extent, do they differ from each other and how are they related to each other so far as these variables are concerned, are some of the problems of our concern. Is it possible to identify and hierarchically present some of these predictors of OA and UA?

Specifically and explicitly, the problems could be stated as under:

(i) Whether the OA and UA possess similar traits of personality, same aptitude, and same level of \( n \) Ach or they display different traits of personality, differential aptitudes, and different levels of \( n \) Ach? And if so, what are those psychological constructs related to these variables. Could it be possible to identify them?

(ii) Whether the relative contribution of these
identified traits of personality, aptitudes and level of n Ach of the OA and UA could be ranked in order of their predictability? Further, is it possible to estimate the interactional variance of the main independent variables on the dependent ones?

(iii) Whether any relationship exists between the independent variables (identified traits of personality, aptitudes and level of n Ach) of the OA and UA. If so, what would be the coefficients of inter-independent variables' correlation?

1.5 Scope and significance of the Problem.

This study has a direct bearing upon the national progress and prosperity as well as upon the Indian Educational problems and social change. From the point of view of raising national human capital, no other problem would be as important as the utilization of existing human talents and potentialities. Thus, every individual who is in any way interested and is concerned in the national progress and human welfare is directly or indirectly concerned with the findings and its application. It is thus useful not only to the parents, teaching personnel, guidance-workers, educational planners, policy makers, and researchers in their own ways, but also to the individual students who are really said to be the architects of their own careers. This study would add meaningfulness to educational system. Knowledge of differential pattern of personality traits, specific aptitudes and level of n Ach of OA and UA would equip each one of u with psychological criteria by
the application of which education can be more meaningfully redesigned in the light of the present explosion of knowledge in science and technology; talent can be suitably channalized, mobilized and utilized; thereby preventing its loss or wastage; and this is how education can be made more realistic and pragmatic one. This is a study of national significance and of national interest, and therefore, its scope is extended from each individual to the nation through different Indian communities, living in 'unity in diversity'.

Channalization of talents and mobilization of potentials are essential criteria of raising human capital. Mohsin(1963) has highlighted the significance of conservation and development of such talents. He remarked that society consists of individuals. But it is only few exceptionally talented individuals who contribute most to the growth of society. They create new horizons and set new standards in science, technology, literature, fine arts, business, industry and social leadership. No sooner does society become devoid of nature's gift of talents, then it would start to stagnate and ultimately perish. Society consequently owes a much greater obligation to its talents. Significance of the problem lies in diagnosing the typical traits of personality, identifying the specific aptitudes and measuring the level of $M_Ach$ of these OA and UA; whose contributions are immensely useful in pooling up the human capital. Inability to identify in the absence of any scientific psychological criteria may put the nation to colossal
loss of human resources. This study would equip the educational planners, policy makers, guidance workers and practical teachers with a psychological criteria of identification of under-achievement so that education for them may be designed more meaningfully; thereby raising the national human capital and preventing the occurrence of under-achievement in educational institutions.

The study has significance and importance because a comprehensive idea of achievement was kept in view to ensure the accuracy in determining the OA and UA. Under-achievement in one subject may be due to other factor also. In the same way, in one subject, a student can secure higher marks too. So by depending upon one subject alone, we should not label them as OA or UA. Hence after careful thinking, it was decided to use the marks of one external (Board's examination) and two internal (School examination) examinations as a measure of the scholastic achievement of the students.

Measuring aptitudes, personality traits and achievement motivation of the UA is a problem of great concern for themselves, and consequently for the parents and society. It may suggest the following cues for improving our education:-

1. Selection of suitable streams of studies for students and this may facilitate to minimise the number of UA.

2. Understanding the personality traits of OA and UA and thus dealing them accordingly as regards teaching methods, home work, discipline, etc. This will improve the situation and check unnecessary taguation and
3. Provision of special environmental facilities to UA.
4. Increasing achievement motivation of UA by carrying them nearer to life situations related to education.

This study has a diagnostic significance and preventative application for under-achievement in educational institutions.

1.6 Formulation of Hypotheses.

With a view to probe into the problems of this study scientifically, the following hypotheses have been formulated:

Hypotheses I Intra-Independent Variables as Predictors of OA and UA.

"On all 14 bipolar traits of personality of Cattell, four important aptitudes and n Ach, the OA would display different psychological constructs from the UA."

More specifically, it is assumed that —

(a) "The OA would display better verbal, reasoning, numerical and scientific aptitudes than the UA."

(b) "The OA would show higher level of n Ach than the UA." and

(c) "The OA would reveal traits of personality having a greater tendency to be polarized at the positive pole than the UA."

This hypothesis aims at identifying certain traits of personality on Cattell's HSPQ, measuring 14 bipolar traits, diagnosing specific aptitudes which include reasoning,
numerical, scientific and verbal, and measuring the level of \( m_{\text{Ach}} \) of the OA and UA. The similarity and difference between the OA and UA in the independent variables as predictors could be, thus, identified.

With a view to pin-point the problem, and thereby enhance its specificity, the data of first hypothesis has been analyzed in terms of streams of diversified courses of study, sex, and territorial variations. Obviously, some sub-hypotheses of hypotheses I have been formulated. These sub-hypotheses are as follows :-

Sub-Hypothesis I : Streamwise Differences.

We hypothesize that, "both the academic over-as well as under-achievers in Science —

(a) Would display no difference in their composite aptitude.

(b) Would attain higher level of \( m_{\text{Ach}} \), and

(c) Would reveal a greater tendency for the traits of personality polarized towards the positive pole, than those in Humanities and Commerce streams."

Sub-Hypothesis II : Sexwise Differences.

It is hypothesized that —

(a) "The female over-as well as under-achievers would possess better composite aptitude than the male over-and under-achievers respectively."

(b) "The female OA would reveal higher \( m_{\text{Ach}} \) than the
male OA; while the levels of n Ach of both, the female
and male UA would be significantly inferior to the
female and male OA; the level of n Ach of male OA
being the lowest."

(c) "Both the female and male OA would display relatively
superior traits of personality on the HSPQ than the
female and male UA."

Sub-Hypothesis III: *Territorial Differences* .

We hypothesize that —

(a) "The rural over-as well as under-achievers would
display significantly inferior composite aptitude
to the sub-urban pupils of both the categories
while the urban over- and under-achievers would
reveal significantly superior composite aptitudes
to both the rural and sub-urban over- and under-
achievers."

(b) "The rural over-as well as under-achievers would
reveal the lowest level of n Ach while the urban OA
and UA, the highest, the sub-urban being placed in
between these two territorial extremes."

(c) "The urban OA and UA would show a greater tendency of
the traits of personality polarized towards the
positive pole whereas the rural OA and UA would
reveal a tendency towards the negative pole; the sub-
urban between these two territorial extremes."
Hypo. II: Interactional Variance of the Main Independent Variables for the OA and UA.

"H Ach would be ranked as the most interactive variance, and aptitudes as the least interactive for the OA, while for the UA, the traits of personality would be the most interactive variance, and aptitudes as the least interactive."

This hypothesis aims at studying the pattern of interaction of three main independent variables in relation with the dependent variables; the OA and UA.

Hypo. III: Hierarchical presentation of the Independent Variables as Predictors of OA and UA.

"The traits of personality would be better predictors of both; the OA and UA than the aptitudes or H Ach. And between the latter two, H Ach would be a better predictor than the former. The hierarchy of these psychological constructs would be invariably operative in case of both; the OA and UA."

This hypothesis aims at studying the relative contribution of all the independent variables under study. Hierarchically, the identified traits of personality, the H Ach and the specific aptitudes would be the order in which these independent variables contribute as predictors of both; the OA and UA.

Hypo. IV: Inter-Relationships among Independent Variables of the Study.

"The indices of correlations between the 18 variables
(e.g. 14 bipolar traits of personality, one aptitude, one \textit{Ach} and two criterion variables) as predictors of under-
achievement would be invariably lower than those of the over-
achievement."

This hypothesis aims at computing the coefficients
of correlations between the different independent and criterion
variables as mentioned above with a view to study the inter-
independent and criterion variables' relationships.

1.7 \textbf{Concepts and their operational definitions.}

Most of the concepts, psychological constructs have
ever remained to be controversial issues, and therefore, they
have been best defined operationally on the strength of the
scores obtained by Ss on a specific test. The description of
the tests used for the study, and the rationale for their
selection as instruments in the collection of data, have been
presented in the relevant chapters. The operational defini-
tions of the concepts of these psychological constructs used
in this study are as follows:

\begin{enumerate}
  \item \textbf{Criterion Variables.}
    \begin{enumerate}
      \item \textbf{Intelligence.}
        
        Operationally, 'Intelligence' has been defined here as
        the aggregate score obtained by a S on the two scales - Verbal
        and non-verbal, of the 'Mixed Type Group Test of Intelligence'
developed in Hindi by P.N. Mehrotra (1973) on the model of
        Wechsler's Scale of Intelligence for children (1949). The
        'Full Scale' of Mehrotra presents a global mental ability of
the testee as defined by Wechsler and reveals specifically the high level of 'g' saturation, which ascertains the specific area of measuring the general mental ability (Stephens). The description and the rationale for the selection of the 'Mixed Type Group Test of Intelligence' have been presented in Chapter II.

(ii) **Scholastic Attainment.**

'Scholastic Attainment' is the successful accomplishment or acquisition of planned learning experiences by the students; after a certain unit of instruction is imparted in a planned manner by the teacher. The learning Chemistry thus assimilated could be tested either by some teacher-made tests or by some standardized achievement tests. The latter is more reliable and valid in comparison to the former one. However, imenitable teaching being a continuous operation of teaching-learning process, it is the specific teacher who can specifically evaluate what has been taught by him in a certain unit of instruction. It is, because of this, that internal as well as external teacher-made tests or examinations have their own specific merits; and therefore, the scholastic ability of the pupils can also be effectively and reliably measured by teacher-made-tests through their external or internal examinations.

Operationally, the scholastic attainment has been defined here as the average scholastic accomplishment achieved by a S on his three consecutive external as well as internal examinations on various school subjects conducted by the
concerned authorities. This average scholastic score would be the index of his scholastic performance.

(B) **Independent Variables.**

(iii) **Aptitude.**

Reasoning, numerical, scientific and verbal aptitudes have been included as the independent variables of this study. They have been measured by some standardized Indian aptitude tests measuring specific potentialities in the types of aptitude mentioned above. They are the valid measures of predicting the success in specific fields of study and interest. The description of these tests of aptitude, and the rationales of their selection for measuring the specific aptitude have been given in Chapter III.

These four types of aptitude have been operationally defined here as the aggregate score obtained by a S on the specific aptitude as its predictive measure. Thus four separate T-scores on four tests for each S are obtained as indicator of his reasoning, numerical, scientific and verbal aptitude respectively.

(iv) **Personality.**

In this study, personality traits of the over-and under-achievers have been identified by the use of Cattell's Jr.-Sr. High School Personality Questionnaire (HSPQ) which measures fourteen broad types of bipolar traits of personality. Operationally, personality has been defined here as the standard-scores obtained by a S on each one of the fourteen bi-
major traits describing some specific types of traits of personality on the HSPQ. The description and rationale of selection of the HSPQ for this study have been given in Chapter III.

(v) **Achievement Motivation.**

Achievement motivation has been operationally defined here as the scores obtained by a S on the Achievement Motivation Inventory (AMI) which gives four scores, namely AR (Achievement-Related Responses), TR (Task-Related Responses), UR (Unrelated Responses), and the AMI score. The total number of AR constitutes the score on AR of AMI. UR and TR are also obtained in a similar manner. The total AMI score is obtained by deducting UR scores from AR scores.

C. **Dependent Variables.**

Academic over-achievement and under-achievement are the two relative terms which have been employed here as dependent variables. The study does not deal with high achievement or low achievement; which are rather different from over-achievement and under-achievement. This study has been designed on the concepts, and criteria of the over-and under-achievement; and not on the high-and low-achievement.

In the teaching-learning process, the educand accomplishes certain learning-experiences in a specified period, and thereby attains a certain level of proficiency in the learning experiences, imparted to him. This level of accomplishment in the specific academic field may be termed
as 'Scholastic Achievement'. When a pupil excels his peer group on a scale of scholastic attainment and attains more than 75th percentile scores, he may be labeled as 'High-Achiever' whereas if he scores relatively marks on the same scale below 25th percentile, he may be said to be 'Low-Achiever'. The pupils whose achievement scores fall between 40th and 60th percentiles may be said to be 'Normal-Achievers'. Both the 'high-achievement' and 'low-achievement' are also relative terms; but the intra-variable (i.e. scholastic attainment) comparison of a certain pupil on a scholastic attainment scale is made with his other peer groups who have either excelled him or who have been excelled by him in the scholastic attainment. Thus in high-achievement and low-achievement, intra-ability comparison on a scale of accomplishment in a certain subject among inter-individual or group is made.

The academic over-achievement and under-achievement are the relative terms where inter-ability (general mental ability or such other psychological constructs as Criterion Variables in relation with scholastic ability) comparison of a pupil is made. The scholastic accomplishment of a pupil is compared with his mental ability or aptitude or teacher's rating or GPA or any other variable and thus, the relativity is considered between general mental ability or aptitude or teacher's rating or GPA and scholastic ability on counts. The over-or under-achievement makes provision for inter-variable estimation. The relative nature of high-achievement
and low-achievement is interpreted on a scale of scholastic accomplishment in a certain subject of a pupil in comparison to his peers. The academic standing of an over-achiever or under-achiever in a certain subject is compared with his general mental ability or his aptitude or his scholastic ability as evaluated by his teachers; which may be considered as intra-individual-inter-ability comparison whereas the academic standing of a high-achiever or low-achiever in a certain subject is evaluated on a scale of scholastic accomplishment in the same subject, and his standing is compared with his peers; which may be considered as intra-scholastic accomplishment, scale-inter-individual comparison.

In the present study, the academic over-achievement and under-achievement have been treated as dependent variables; and the high-achievement, low-achievement or normal-achievement do not form in any way the subject matter of study.

**Over-achiever and Under-achiever.**

An over-achiever is a diligent pupil whose scholastic accomplishment in a certain subject, has excelled his general mental ability or his aptitude. An under-achiever is an intellectually gifted pupil whose scholastic accomplishment is well below his level of general mental ability and aptitude. The scholastic accomplishment of a modal or normal achiever does not differ significantly from his intelligence. A modal achiever shows equal level of performance on the test of scholastic attainment as well as of general mental ability or aptitude.
In this study, the general mental ability has been taken up as the criterion variable. The aptitude, the GPA or teacher's rating on the ability of the pupils which could also have been used as criterion variables; have not been taken for the study.

The over-achiever and under-achiever have been operationally defined here on the relative strength of their scores obtained on both the test of general mental ability and scholastic attainment. In view of its relevance, the concepts, criteria, methods and procedures of identification of the OA and UA have been presented in Chapter II.

1.8 Delimitation of the Problem.

The problem has been delimited by the following considerations :

1. This is a concurrent correlational comparative study, diagnostic in nature. No attempt has been made to design it experimentally.

2. The data has been collected from the pupil population studying Humanities, Science and Commerce courses as their diversified subjects in the rural, urban and sub-urban secondary schools of Raipur District in Chhattisgarh Region. Tribal pupils from tribal schools located in tribal belts as well as other educational streams of secondary school have been excluded.
3. The problems taken into consideration has only 14 variables of personality traits, 5 variables of aptitudes and 4 variables of a Ach; though in all, there are 25 psychological variables including the scores on Test of Intelligence and Scholastic Attainments. The problem has not been extended beyond the study of these variables.

4. No attempt has been made to explore the causal factors, whether social, economic, emotional, religious or environmental, as determinants of under-achievement or over-achievement. Similarly, the correction and prevention of under-achievement have also been considered beyond the reach of this study.

5. The problem is concentrated only at the correlational comparative study of mainly three psychological constructs i.e. Personality, Aptitude and Achievement Motivation as specified above of the OA and UA. It has a diagnostic and predictive value. It does not aim at making any clinical or developmental analysis or offering any solution for their problems.

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