CHAPTER VI

CONCLUSIONS.

6.1 Summary.

6.2 Conclusions.

6.3 Recommendations.

6.4 Suggestions for improvement of UA.

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CHAPTER VI

RESUME.

6.1 Summary.

Individuals are characterized by their specific dispositions and inborn potentialities. Specificity in adaptation and selectivity in assimilation further enhance their endowments, develop their specific abilities and thus equip them with better psychomotor capacities and cognitive excellence.

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 pupils having even average intelligence have shown surprisingly high attainments whereas pupils 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 pupils possessing two different types of general mental abilities in relation to their scholastic achievements, then possession of specific aptitudes, personality dispositions and different level 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 academic over- and under-achievers help in guidance and counselling programme. And, any developing democratic nation can not ignore such a vital issue of maximum utilization of the available diversified talents of the nation in the interest of the national progress and prosperity.

Following are the specific problems which have been undertaken in this study:

Problems:

(i) Whether the OA and UA possess similar traits of personality, same aptitude and same level of m Ach or they display different traits of personality, differential aptitudes, and different levels of m 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 hierarchically presented 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?

**Delimitation:**

This is a correlational study. The data has been collected from the students studying Humanities, Science and Commerce courses as their diversified groups in the rural, urban and sub-urban secondary schools of Raipur district of the Chhattisgarh region of Madhya Pradesh. Fourteen bipolar personality traits of Cattell, five aptitudes and \( n \) Ach constitute the independent variables of this study whereas the OA and UA are the dependent variables. No other variables have been included here.

**Operational Definitions:** Terms and concepts employed as criterion, independent or dependent variables have been operationally defined. A research definition has also been submitted as a criterion of identification of the OA and UA; the dependent variables.
Formulation of Hypotheses:

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

Hypo. I: Identification of Independent Variables as predictors of OA and UA.

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

More specifically, it has been assumed that, (a) "the OA would display better verbal, scientific, numerical and reasoning aptitudes than the UA", (b) "the OA would show higher level of m Ach than the UA", and (c) "the OA would reveal traits of personality having a greater tendency to be polarized towards the positive pole than the UA".

Similarity and difference between the OA and UA in the independent variables as predictors could be, thus, identified.

From the point of data-analysis, Hypo. I has been divided into three sub-hypotheses.

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 $n$ 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 $n$ 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 UA being the lowest.

(c) Both the female and male OA would display relatively superior traits of personality on the HSPQ to 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 aptitudes 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 OA and UA being categorized in between these two territorial extremes.

**Hypo. II : Interactional Variance of the main Independent Variables for OA and UA.**

"\( n \) Ach would be ranked as the most interactive variances, and aptitude as the least interactive for the OA, whereas for the UA, the traits of personality would be the most interactive variance, and aptitudes as the least interactive."

**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 \( n \) Ach. And between the latter two, \( n \) 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."
Hypo. IV: Relationship between Inter-Independent Variables of the OA and UA.

"The indices of correlations between the independent variables (e.g. 14 bipolar traits of personality, 5 aptitudes and n Ach) as predictors of under-achievement would be invariably lower than those of the over-achievement."

A Brief Review of previous studies: Studies abstracted in the American Psychological Abstracts on the OA and UA commencing from 1961 onwards to 1975 have been systematically analyzed and the directionality and dimensionality of related research on OA and UA have been objectively presented in this thesis. Numerous studies are available on UA, but OA have been insignificantly studied. The importance of studying the UA has also been reflected through the abstraction of published studies on UA.

Methodology.

1. Size of the Sample and Technique of Sampling.

Academic over-and under-achievers have been identified from the top and bottom 10% pupils from each section of grades IX, X and XI of the Higher Secondary Schools. 1948 pupils of both the sexes from the three streams, i.e. Humanities, Science and Commerce as diversified courses in Higher Secondary Schools located in the
Raipur district of the Chhattisgarh region of M.P. were randomly drawn out for the pilot study purposes. The Mixed Type Group Test of General Mental Ability by Mehrotra was administered to all these Ss under the assumption that over-achievers and under-achievers both could be maximally located in this stratum of pupil population. Systematic random quota cluster sampling technique has been employed for selecting the schools located in different geographical settings.

The study has a base of the experimental design of Getzels and Jacksons (1962) and Wallach and Kogan (1965) which was employed as the screening process of highly creative and highly intelligent pupils. Shaw's (1961) techniques of extreme group selection process and maximum difference between the two criterion variables, i.e., intelligence and scholastic performance supported by median value technique of screening process has been used as the criterion of identification. By employing these techniques, 291 over-achievers, and 236 under-achievers were identified from a total of 1948 Ss. The study-proper has been based upon these 527 Ss. The residual sample has been left untreated and untreated.

II. Method.

The total raw scores on various school-subjects of all the pupils from standards IX, X and XI have been collected from the records of their three past consecutive
examinations out of which one was the external and the other two internal examinations. The average raw scores of these three examinations have been the criterion of pupils' academic attainment. However, with a view to make these raw scores more meaningful and to make comparison of scores between intra- and inter-streams more objective, they have been converted into T-scores. The T-scores thus obtained have been treated as the criteria of scholastic attainments of the Ss.

The general mental ability of all the 1948 Ss has been measured by a 'Mixed Type Group Test of Intelligence' standardized by Mehrotra. With a view to make the comparison of scholastic accomplishment of both the OA and UA on identical base, the raw scores on the Mixed Group Test of Intelligence have also been converted into T-scores. No other but general mental ability has been accepted as the predictive (criterion) variable of the OA and UA.

The T-scores on the tests of academic attainment and Intelligence of all the Ss have been compared after having recorded them systematically. On the relative strength of the scholastic attainment and intelligence in terms of T-scores, the pupils have been categorized under the following four groups on the experimental design pattern employed by Wetzel and Jackson (1962) and Wallach and Kogan (1965) :-
1. High Intelligence - High Achievement ($H_i - H_a$)
2. High Intelligence - Low Achievement ($H_i - L_a$)
3. Low Intelligence - High Achievement ($L_i - H_a$)
4. Low Intelligence - Low Achievement ($L_i - L_a$)

The present study has been confined to the second and third categories only i.e., High Intelligence-Low Achievement ($H_i - L_a$) and Low Intelligence-High Achievement ($L_i - H_a$). The Ss classified under the former category have been labelled as 'Under-achievers' whereas Ss belonging to the latter group has been called 'Over-achievers'.

For a scientific analysis Ss excelling in the intelligence test scores by -6.8 rounded up as -7 points or above in comparisons to their academic scores have been characterized as 'Under-achievers' whereas Ss excelling by +5.6 rounded up as +6 points on the tests of academic excellence in comparison to test of intelligence have been considered as 'Over-achievers'. Median values of the pupils in the Group $H_a - L_i$ and $H_i - L_a$ have been computed; and all Ss above or below the median values as the case may be, in the respective sample categories, were labelled as OA or UA. The inter-ability significant differences of the OA and UA have been ascertained by 't' values also. Having characterized Ss as over-achievers (291) and under-achievers (236) from the population under-study, they were given tests of Aptitudes, aAch and Personality Traits.
III. Instruments.

(1) For Criterion Variables:

(a) Intelligence: Measured by the Mixed Type Group Test of Intelligence by Mehrotra.

(b) Scholastic Attainment: Estimated from the average of the last three consecutive internal as well as external examinations.

(2) For Independent Variables:

(a) Aptitudes: Four main aptitudes have been included. They are measured by:

i. Numerical Aptitude measured by Number Numerical Aptitude Test (NAT) of the 'Scientific Aptitude Test Battery' by Agarwal.

ii. Reasoning Aptitude measured by 'Reasoning Aptitude Test (RAT) of the 'Scientific Aptitude Test Battery' by Agarwal.

iii. Scientific Aptitude measured by (1) Scientific Vocabulary, and (2) Scientific Information Tests as sub-tests of 'Scientific Aptitude Test Battery (SAT) by Agarwal.

iv. Verbal Aptitude measured by 'Verbal Aptitude Test' by Sharma, V.P.

(b) Personality Traits: Personality Traits were measured by Jr.-Sr. HSPQ (Cattell) adapted by Kapoor under Indian conditions.
(c) \( \eta \text{ Ach} \) : \( \eta \text{ Ach} \) was measured by the Achievement Motivation Inventory (AMI) of Prayag Mehta.

In this study, intelligence and scholastic accomplishment have been considered as criterion variables, five aptitudes scores (NAT, NAT, VAT, SAT and Composite Aptitude), 14 personality variables and 4 \( \eta \text{ Ach} \) scores as independent variables whereas the OA and UA have been treated as dependent variables.

IV. **Procedure.**

The standard procedures, precautions and control mentioned in the manual of norms have been followed.

After having labelled the Ss as OA \((N=291)\) and UA \((N=236)\) on the strength of \( T \)-scores on school achievement and test of intelligence, they have been given the test of achievement motivation, tests of aptitudes and personality in three convenient sessions of hour each.

**Data Processing and Data Analysis.**

The data obtained from the various aptitude, personality and achievement motivation tests have been analysed in the sequence of hypotheses and processed by the computer in terms of various independent variables under-study. Their means, standard deviations and standard errors of means have been computed and 't' values have been estimated. Product moment as well as multiple
correlations have also been computed for studying the inter-
relationships between the different sets of scores. Analysis
of variance and Multiple Regression Analysis techniques have
been employed with a view to study the interactional pattern
of the variance of this study and to estimate the relative
contributions of different independent variables as pre-
dictors of OA and UA.

Results, Interpretation and Discussion.

The results obtained from the statistical analysis
have been interpreted and discussed in the sequence of
hypotheses and sub-hypotheses. The interpretation has been
done in the light of various probable psycho-social variables
acting and counter-acting the results. Some of the main
findings of the study are as follows :-

6.2 Conclusions.

6.21 Criterion Variables.

(1) The OA have been found significantly superior in
their scholastic accomplishment to the UA by 7 points or
more while the latter excelled the former significantly in
their general mental ability in comparison to their scho-
lastic attainment by 6 points or more.

A highly significant positive correlation (r=.654,
P<.01) established between intelligence and scholastic
ability for the UA, whereas the relationship is moderately
significant \( r = .357, P < .05 \) for the OA. All differences between T-score means of the OA and UA on intelligence and scholastic attainment have been found extremely significant. These 't' values have ascertained the high level of dependability of the two groups, 30 selected.

6.22 Independent Variables, as Predictors of OA and UA.

The results obtained and the conclusions drawn have been presented in the sequence of hypotheses and sub-hypotheses. With a view to give a global presentation, all conclusions drawn on various hypotheses and sub-hypotheses have been outlined under each of the main independent variables. Hypo. I-a, Sub-Hypo. I-a, II-a and III-a deal with conclusions on 'Aptitudes', Hypo.I-b, Sub-Hypo. I-b, II-b and III-b with n Ach, and Hypo.I-c, Sub-Hypo. I-c, II-c and III-c with personality traits. Hypo. II, III and IV present conclusions on interactional variance, hierarchical presentation of predictors of OA and UA, and relationships between criterion and independent variables respectively.

6.221 Aptitudes.


(1) The OA displayed significantly better scientific aptitude than UA, while the latter excelled the former in numerical, reasoning and verbal aptitudes.


(2) The OA and UA offering Science, Humanities and Commerce do not differ significantly in their T-scores on
the composite test of aptitude except in Humanities. Further, no inter-stream differences have been found between the three streams of study, except between Science and Humanities offered by the UA and OA respectively.

Sub-Hypo. II-a (Entirely rejected).

(3) No sex-difference between and within OA and UA has been observed, so far as the composite aptitude is concerned.

Sub-Hypo. III-a (Partially retained).

(4) The sub-urban UA displayed the highest composite aptitude whereas the rural UA, the lowest; the urban UA being categorized in between these two. So far as the OA are concerned, the urban OA have shown the highest composite aptitude while the rural OA, the lowest; the sub-urban OA being in between these two categories. The former part of the Sub-Hypo.III-a, i.e. inferior composite aptitude of the rural OA and UA is only tenable while the latter are untenable.

6.222 \[ \text{Hypo. I-b (Entirely retained).} \]

(5) The differences between the means of the OA and UA on both the scores i.e. AR and AMI respectively have been found extremely significant; in favour of higher means for the former group.
Sub-Hypo. I-b (Partially retained).

(6) Significant differences between the means of the OA and UA in \( n \) Ach have been found both in Science and Humanities; however, the OA and UA offering Commerce did not indicate significant difference in that \( n \) Ach.

Sub-Hypo. II-b ( Entirely rejected).

(7) The male OA have significantly higher \( n \) Ach than the other three sex-categories of OA and UA. On a scale of \( n \) Ach, the male OA have been placed at the top of the scale while the female OA at the bottom; the two sexes i.e. female and male UA being placed respectively at the third and fourth rank.

Sub-Hypo. III-b ( Entirely rejected).

(8) Both the rural OA and UA displayed the highest \( n \) Ach. So far as the level of \( n \) Ach of urban and sub-urban OA and UA is concerned, the urban OA have shown lower \( n \) Ach than the sub-urban OA, while the urban UA have excelled sub-urban UA in \( n \) Ach.

6.223 Personality Traits.

Hypo. I-c ( Entirely rejected).

(a) None of the personality traits indicated an extreme tendency of being polarized to, either of the \( \phi \) or \( \lambda \), i.e., the high scored or the low scored. However, the OA scored higher means than those of the UA, showing at highly
significant difference beyond .01 level of confidence of and a significant personality traits in factor G and Q3. A difference at .05 level on factors F, I and O. It is, further, concluded that out of the factors, the OA have achieved higher stem-score means on 12 factors, on one being equal; and in the remaining one (Factor J), the UA have excelled the OA.

Sub-Hypo. I-c (Partially rejected).

(10) On the HSPQ, the OA and UA offering different streams of study reveal a characteristic common personality disposition on factor A (Sizothymia - Cyclothymia).

(11) On factors B (Lower scholastic mental capacity - Higher scholastic mental capacity), E (Submissiveness - Dominance) and Q3 (Low integration - High self-concept control) a significant difference between the stem-means of the OA and UA studying Science as their diversified subjects has been recorded.

(12) The UA and OA offering Humanities have shown significant differences on factor C (Lower ego strength - Higher ego strength) and J (Zeppia - Coasthenia).

(13) On factor I (Threctia - Parmia), the OA and UA of both Science and Humanities showed significant personality differences, whereas no difference in personality traits of the OA and UA offering Commerce has been recorded; most probably because of small size of sample.
Sub-Hypo. II-c (Partially rejected).

(14) The male OA and UA displayed highly significant differences on factors G, H, I and Q; the means being consistently higher in favour of the former whereas the female OA and UA differed significantly only on factor C of the HSPQ, the mean being higher in favour of the latter.

Sub-Hypo. III-c (Partially rejected).

(15) The urban OA and UA revealed a highly significant difference between their sten-means on factors A, H, and J whereas the sub-urban OA and UA differed significantly on factors D and I of the HSPQ. No personality difference has been observed between the rural OA and UA. Lack of polarized sten-scores limits the level of certainty of the trait configuration in the OA and UA of the urban, sub-urban and rural areas.

6.224 Aptitude, n Ach and Personality Traits: A Global Prediction.

(16) A global analysis of the results obtained on the inter-stream differentials in aptitude, n Ach and personality traits reveal that the OA and UA are characterized by their specific traits and talents needed for the study of the different subjects of a diversified stream.

(a) The OA offering Science, Humanities or Commerce have shown higher aptitude for Science, greater n Ach and consistently higher sten-means on eleven factors of personality
traits, except on factor C, H, and Q, than the UA.

(b) The OA studying Humanities revealed relatively higher scores than the UA on RAT and VAT as well as higher mean on $\eta_{Ach}$, as well as their specific traits of personality on factors C, J, H and A.

(c) No significant difference between means in the different independent variables of the OA and UA offering Commerce have been recorded. The untestable size of the sample necessitates a further verification of the findings on a testable size.

(17) Both the male-as well as female-OA and UA did not differ significantly on the Composite Test of Aptitudes; however, a striking significant difference between the male OA and UA has been obtained in $\eta_{Ach}$, though the female OA and UA did not show any significant difference in $\eta_{Ach}$.

(18) No significant difference has been recorded between the male and female of the OA as well as UA on the Test of Composite Aptitude; however, on the test of $\eta_{Ach}$, the male and female OA differed extremely significantly, though no significant difference existed between the male and female UA in this regard.
(19) The OA regardless of sex are persons of higher \( m \) Ach whereas the UA relatively possess very inferior \( m \) Ach.

(20) The male OA and UA displayed highly significant differences on factors G, H, I and Q3; the means being consistently higher in favour of the former whereas the female OA and UA differed significantly only in factor C of the HSPQ; the mean being higher in favour of the latter.

(21)(a) The difference between the means of the sub-urban UA and OA on the Composite Aptitude Test was found extremely significant; the mean being higher in favour of the former.

(b) The rural OA and UA showed a difference between their T-score means in the Composite Aptitude only to the extent of .05 level.

(c) The urban OA and UA did not reveal any significant difference in their composite aptitude.

(22)(a) The difference between the AMI means of the sub-urban OA and UA as a measure of \( m \) Ach have been found significant.

(b) The rural OA and UA differed in their \( m \) Ach to the extent of .05 level.

(c) No significant difference in \( m \) Ach has been observed between the urban OA and UA.
(23) The sub-urban OA and UA showed a significant difference, the rural OA and UA showed a slight difference whereas the urban OA and UA did not show any difference in the composite aptitude and the n Ach.

(24) The urban OA and UA displayed a highly significant difference between their sten-means on factors A, H and J whereas the sub-urban OA and UA differed significantly on factors D and I of the HSPQ. No personality difference has been observed between the rural OA and UA. Lack of polarized sten-scores limits the level of certainty of the trait configuration in the OA and UA of the urban, sub-urban and rural areas.

(25) Regardless of territorial differences, the OA showed a significant difference of personality traits in factors G and Q3 beyond .01 level, the sten-means being higher in both the factors. On factor H, the difference between sten-means of the OA and UA was found significant at .02 level whereas on factors F, I and O, a difference to the extent of .05 level was recorded. On all these factors, the OA scored higher means than those of the UA; however, lack of polarization of traits of personality deprives us of the certainty of results; and directs to verify the findings on an extreme group-intra-category operation of sten-scores of the individual Ss in each category.

6.23 Inter-Independent Variables as Predictors of OA and UA.
6.231 Interactional Variances of the Independent Variables as Predictors of OA and UA.

Hypo. II (Entirely rejected).

(26) The greatest source of variance for the OA was the personality variables ($F = 98.4927, P < .001$) whereas it was the aptitude scores ($F = 69.7241, P < .001$) for the UA; though all the possible variances are significantly affecting the result in different dimensions.

(27) In case of interactions, the greatest source of variance was located at (aptitude x personality traits) for the UA whereas the optimum interaction as a source of variance for the OA was observed in (Ach x personality traits). Personality trait is a common independent variable affecting both the over- as well as under-achievement in varying degrees.

6.232 Hierarchical Presentation of Independent Variables as Predictors of OA and UA.

Hypo. III (Partially rejected).

(28) The AMI scores for the OA ($F = 5.067, df = 1,153, P < .01$) and the factor B for the UA ($F = 7.697, df = 1,153, P < .01$) have shown the maximum, while factor D for OA ($F = 1.418, P > .01$) and Q2 for UA ($F = 0.867, P > .01$) have shown the minimum relationship with the dependent variables.

(29) The first five independent variables which significantly affect the dependent variables, and therefore,
of the OA than those of the UA \((N = 16)\) whereas the positive coefficients have been recorded more \((N = 137)\) in favour of the latter rather than of the former \((N = 113)\).

(31) The indices of inter-correlations of the variables of the OA ranged between 
\(-.218\) and 
\.538 whereas of the UA between 
-.222 to 
+.654.

(32) The indices of the significant relationships among the OA and UA ranged from +.349 to +.538 and from +.400 to +.654 respectively.

(33) Hierarchically, intelligence and composite aptitude \(r = .538, P < .01\) has been ranked first showing the highest relationship in the OA whereas the intelligence and scholastic attainment has shown the highest relationship \(r = .654, P < .01\) in the UA.

(34) The first ten relationships hierarchically established between the independent variables of the OA and UA have been tabulated below:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Order</th>
<th>OA Relationship</th>
<th>(r)</th>
<th>OA Relationship</th>
<th>(r)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>between</td>
<td></td>
<td>between</td>
<td></td>
</tr>
<tr>
<td>At (.01) level:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Intelli. vs. Comp. Apt.</td>
<td>.538</td>
<td>Intelli. vs. Sch. Ach.</td>
<td>.654</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Factor D vs. (Q_4) of HSPQ</td>
<td>.509</td>
<td>Factor B vs. Comp. Apt.</td>
<td>.606</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Factor C vs. H of HSPQ</td>
<td>.475</td>
<td>Factor C vs. H of HSPQ</td>
<td>.582</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Factor C vs. F of HSPQ</td>
<td>.393</td>
<td>Factor C vs. H of HSPQ</td>
<td>.564</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Factor C vs. (Q_3) of HSPQ</td>
<td>.375</td>
<td>Intelli. vs. Comp. Apt.</td>
<td>.513</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Factor I vs. O of HSPQ</td>
<td>.374</td>
<td>Factor D vs. (Q_4) of HSPQ</td>
<td>.505</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At (.05) level:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Intelli. vs. Sch. Ach.</td>
<td>.357</td>
<td>(\text{Ach vs. B of HSPQ})</td>
<td>.419</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Factor H vs. (Q_3) of HSPQ</td>
<td>.357</td>
<td>Factor G vs. H of HSPQ</td>
<td>.400</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Factor O vs. (Q_4) of HSPQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Some of the main variables highly correlated in the OA are non-intellective personality factors like C, H, Q₄, Q₃ and O whereas the primary variables highly correlated in the UA are the intellective factors like intelligence including Factor B of the HSPQ, composite aptitude and scholastic attainment.

The five common relationships with varying degrees of indices of inter-correlations among the OA and UA have been given below:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Relationship between</th>
<th>OA r</th>
<th>OA P</th>
<th>UA r</th>
<th>UA P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intell. vs. Composite Apt.</td>
<td>.538</td>
<td>&lt;.01</td>
<td>.513</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>2</td>
<td>Factor D vs. Q₄ of HSPQ</td>
<td>.509</td>
<td>&lt;.01</td>
<td>.505</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>3</td>
<td>Factor C vs. H of HSPQ</td>
<td>.475</td>
<td>&lt;.01</td>
<td>.564</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>4</td>
<td>Intell. vs. Sch. Ach.</td>
<td>.375</td>
<td>&lt;.05</td>
<td>.654</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>5</td>
<td>Factor O vs. Q₄ of HSPQ</td>
<td>.349</td>
<td>&lt;.05</td>
<td>.457</td>
<td>&lt;.01</td>
</tr>
</tbody>
</table>

Some of the main personality variables significantly interrelated with one another are Q₄, C, G as well as n Ach.

Personality variables C and Q₄ are found common in both the categories whereas H, Q₃ and O are found effectively influencing the relationship of the OA whereas factors B and G are found specific to the UA.

The OA are primarily determined by the non-intellective personality variables whereas the UA are closely related to the intellective factors.
These indices of inter-correlations partially establish the relationships as visualized in the fourth hypothesis (Hypo. IV) and therefore, the hypothesis is tenable to that extent.

**Recommendations**

6.3 On the strength of the findings of the study, the following recommendations are made with a view to improve the lot of under-achievers in the educational institutions:

1/ Since \( \text{m Ach} \) is an important predictor of competitive educational excellence, attempts should be made by the educational authorities to develop achievement imagery among the UA by introducing various effective programmes.

2/ Since verbal aptitude is an essential condition for attaining higher level of educational maturity, attempts should be made to improve the verbal facility of the UA from the early stage of schooling. For this purpose, the UA should be identified right from the elementary school stage.

3/ Since Scientific, Reasoning and Numerical aptitudes sharpen the mental faculty; and thereby, improve the educational standard, it is essential that aptitudes should be cultivated, created, nourished and promoted by introducing various competitive programmes and through effective teaching-learning process among the UA.
4/ Such traits of personality as are important predictors of OA (e.g. factors C, H, Q4 etc.) with a tendency to be polarized towards the positive pole should be inculcated among the UA.

5/ Attempts should be made to inculcate conscious attitude, positive ego-involvement and ego-strength with a view to promote study habits and reading ability by various means among UA.

6.4 Suggestions for Improvement in Under-Achievement.

The past ten years have witnessed a phenomenal increase in the abstraction of published literature in APA on 'Counseling Psychology' for the UA, and numerous techniques have been suggested and programmes have been launched for promoting the under-achievers. Variety of rehabilitation programmes, compensatory education, and numerous multiple group psychotherapies have been suggested as preventive and promotive measures of under-achievement.

In addition, the following suggestions have been offered for the prevention and promotion of the UA and the keeping-up of status-que of the OA.

1. A Bureau of School Counseling and Guidance should be organized in every district place; and a School Psychologist should be appointed in every school, who should diagnose the probable causes of under-achievement in each
subject of every individual child, and enhance cooperation and coordination among the parent, the pupil and the school authorities. The effective guidance service should constitute the core of school and college academic programmes.

2. Diagnostic testing in each subject should be developed, and the remedial teaching programmes based upon the academic deficiency of the individual Ss should be effectively organized in every subject.

3. Cumulative record should be maintained throughout the academic career of the pupil, and it should exactly reflect the individual's gradual progress in all subjects.

4. Since the OA and UA are pupils of diverse traits and talents, the parents and school authorities should effectively cater to the needs and drives of these pupils. Their psychological barriers and cultural blocks on the way of their scholastic accomplishment should be gently removed.

5. Grouping, grading and academic placement in the academic subjects at the school should have a psychological base and the differential system of personality traits, in Ach and aptitudes should be duly taken into consideration. In this context, diagnostic testing and remedial teaching should constitute the regular programme of teaching—
learning-testing process.

6. **Great emphasis should be made on the effective teaching-learning process of languages and mathematics.** Expressional excellence in oral and written speech of the language should be inculcated by organized different types of 'Language Rehabilitative Programmes' and 'Compensatory Educational Classes' in every school for the UA.

7. **The educational institutions should invariably organize such educational programmes as may promote 'Achievement Imagery' (McClelland, 1963) among the UA.** Verbal and non-verbal cues should be functionally made operative for their self-actualization which may subsequently enhance their level of \( n \) Ach.

8. **The teachers and parents should present such models before them whom they identify and practice in life.**

9. **The teachers and educational authorities, before introducing any remedial compensatory or rehabilitative programme in the schools, should first peep into the probable causes of the under-achievement of the pupil; and then group them in accordance with their social, cultural, economic, religious, physical, emotional, moral, mental, linguistic, academic or psychological blocks.** Having diagnosed the primary causal factors of under-achievement, the
remedial compensatory or rehabilitative programmes should be then set up accordingly.

10. A re-evaluation of the 'Special Progress' classes should be made with a view to ensure the proper utilization of the energy mobilized for the improvement in scholastic accomplishment.

11. The programme for identifying the UA should commence from the early years of schooling and should continue till the last year of his academic career.

12. Every under-achiever must be helped by the school psychologist to set a goal for himself, and then, he should constantly pursue him that the UA is moving ahead in accordance with the goal set by him.

13. Teachers, parents, and school psychologists should carefully observe the level of emotional, social, familial and educational adjustment of the UA; and help him in solving the problems of mal-adjustment, if there be any.

14. Positive reinforcement through appreciation of the work and freedom from rigid norms of the school and the home, must be given to the UA; so that the UA may initiate, actualize and execute his own work in his own way.

15. Conformity to converging norms of the individuals
in schools and at home creates anxiety and impulsivity. Consequently, he becomes aggressive and counter-conformist. Such situations on the part of the teacher, the school psychologist and the parents be avoided and freedom at work and in speech should be granted to him, so that he may self-actualize, and promote the 'achievement imagery' in the progress of accomplishing the model that he has been helped to set.

16. Cultural Exchange Programme of under-achievers with over-achievers of other regions having more or less identical age-grade level should be frequently organized by educational institution so that the former may adapt the achievement imagery of the latter.

6.5 Follow-up Research on OA and UA.

The published literature cited in Chapter (1.2) reflected vividly the absence of rich literature on the OA which happened to be even now a term not universally accepted (Gerald, K.Kowitz; Charless M. Armstrong, 1961). The review of the relevant literature (Chapter 1.2) is a reflection upon the relative recognition and importance of the different facets of the OA and UA. Some of the researches in priorities that need immediate attention of the researchers are presented below:

1. Development of universally acceptable research definitions of the OA and UA.
2. The study of socialization process and development of personality dispositions of the UA and OA.

3. Verification of the traits of personality on the HSPQ of the OA and UA when the individual scores are analyzed in terms of extreme-group intra-category data processing.

4. Differentials in psychological attributes of the OA and UA belonging to different castes and communities.

5. An intensive study on the different psychological traits and talents of the OA and UA belonging to different scheduled castes and scheduled tribes.

6. Preparation of Micro-film lessons on the improvement of under-achievement in different subjects.

7. A cross-cultural study of the creative expression and self-concept of the OA and UA.

8. Identification Process and Scholastic Accomplishment.


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