Chapter-VII
Summary
Education is the process by which an individual gains knowledge or insight or develop attitudes or skills. They are called formal education skills. Education is acquired through organized study or instruction as in a school or a college. It is informal when its content arises from day-to-day experiences or through undirected contacts with books, periodicals, motion pictures, radio and television programmes. The function of education is both social and individual. Its social function is to help each individual become a more effective member of society by passing to him the collective experience of the past and the present. Its individual function is to enable him to lead a more satisfying and productive life by preparing him to adapt to new experiences successfully (Encyclopedia Americana, 1965).

Achieving high standards is considered a power symbol and way of life. Everyone desires to attain high standard of excellence. Usually this achievement process begins with the academic attainment of a child at school. In education, the most essential measure of attainment is academic achievement. Traw (1950) defines academic or scholastic achievement as the attained ability or degree of competency in the school tasks usually as measured by the standardized tests and expressed in grades of units based on the norms derived from a wide range of sampling or pupil's performance. Academic achievement indicates the level of progress that a student is making in his course work.

There exists an association between intelligence and academic performance (Lunge, 1974; Lewis & Adank, 1975; McArdle & Woodcsck, 1998. Parker & Benedict, 2002, Watkins et al., 2007). This association suggests that intelligence has a causal influence on achievement. Therefore, a child with an above average IQ should also attain higher grades. This equation constitutes that a child has a high aptitude for success in
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academics. Thus the relationship between intelligence and academic achievement is considered to be the most close one, but the fact that due to individual differences in intelligence, it does not account for the total variance to explain academic achievement. Carmical (1964) suggested that intelligence is not the sole factor in determining academic achievement. There are certain other personality and motivational variables which can also affect academic achievement. However, Weiner's (1974) study suggested that intelligence account for only 25 percent of observed variance in grades. It follows that others variables also have an influence on the academic achievement. The importance of non-intellectual factors in academic achievement has already been discussed. The idea that personality factors play an important role in academic success has been accepted.

Researchers have also pointed out a definite relationship between non-intellectual factors such as creativity, study habits self-concept, locus of control, level of aspiration and motivation with academic achievement. However, there remains a problem of identifying and measuring the factors which lead to success. Thus the present study also attempted to examine the significant relationship of certain non-intellectual factors such as creativity, level of aspiration and achievement motivation with academic achievement.

AIMS

(1) To assess the relationship between academic achievement and creativity among public and private schools in both the genders.

(2) To find out the relationship between academic achievement and level of aspiration among public and private schools in both the genders.

(3) To study the relationship between academic achievement and achievement motivation among public and private schools in both the genders.
Summary

(4) To assess the significant differences on creativity between public and private schools.

(5) To assess the significant differences on creativity between males and females.

(6) To study the significant differences on level of aspiration among public and private schools in both the genders.

(7) To find out the significant group differences on achievement motivation among public and private schools in both the genders.

HYPOTHESES

On the basis of major goals of the present study and review of related research, following hypotheses have been formulated.

(1) The variable of creativity and all its three components viz. fluency, flexibility and originality will be significantly and positively correlated with academic achievement.

(2) Level of aspiration will have a significant and positive correlation with academic achievement.

(3) Achievement motivation will be positively and significantly correlated with academic achievement.

(4) Arts stream students would significantly perform better on verbal creativity than the Science and Commerce stream students.

(5) Private school students would be significantly higher on creativity than the public school students.

(6) Female participants would be significantly higher on verbal creativity than their male counterparts.

(7) Science stream students would be significantly higher on their level of aspiration than the Commerce and Arts stream students.

(8) Level of aspiration will be significantly higher among private school students as compared to public school students.

(9) Male participants would be significantly higher on level of aspiration than their female counterparts.
(10) Science stream students would be significantly higher on achievement motivation than the Commerce and Arts stream students.

(11) Private school students would be significantly higher on achievement motivation as compared to Public school students.

(12) Male participants would be significantly better on overall achievement motivation than their female counterparts whereas female participants would perform better on success-orientation than their male counterparts.

METHODOLOGY

The present endeavour was envisaged in the form of certain goals and aims in view. The present study was conducted with the purpose of examining the relationship of creativity, level of aspiration and achievement motivation with academic achievement among both the genders. In order to achieve the objectives of the study, the following methodology was adopted for carrying out the research on school samples:

RESEARCH DESIGN

The endeavour of the study undertaken was to examine the relationship among creativity, level of aspiration, achievement motivation and academic achievement, hence first of all, a Correlation Design (Product Moment Coefficient of Correlation) was used.

A series of multiple regression analysis was also conducted mainly to reflect the variance that could be explained by each independent variables in predicting dependent variable.

In the third phase of the present investigation, a 3x2x2 factorial design was computed, which consists of 3 levels in terms of streams i.e. Arts, Commerce and Science, at the different schools i.e. Public and Private schools and lastly gender i.e. Boys
and Girls. Graphical presentation of the research design is as follows:

Fig 4.1 Illustration of Research Design

SAMPLE

As the study could not be carried out on the whole population, a representative sample consisting of 600 subjects was taken into consideration which included both male and female subjects from public and private schools. Subjects scoring above 75th percentile on SPM were selected for the present study. A total sample of 600 subjects were drawn randomly from different schools of Shimla city of Himachal Pradesh.

Table No: 4
Total Sample of the study (N= 600)

<table>
<thead>
<tr>
<th>Public Schools (300 sample)</th>
<th>Private Schools (300 sample)</th>
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<tbody>
<tr>
<td>Arts</td>
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<td>50</td>
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<td>Girls</td>
<td>Boys</td>
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TOOLS USED

The following tools were used in the present study:


ii) Verbal Test of Creative Thinking by Mehdi (1973).

iii) Level of Aspiration Scale by Sahi and Bhargava (1987).
PROPOSED STATISTICAL ANALYSIS

1. Correlation analysis: it has been used to see the relationship between different variables.
2. Stepwise regression analysis: it has been used to reflect the variance that could be explained by each independent variable in predicting the dependent variables.
3. Analysis of variance: it has been used to verify if there were any significant differences between samples i.e. between different streams viz Arts, Commerce and Science, Public and Private school and lastly between genders on the variables under study.

RESULTS AND DISCUSSION

(I) VERBAL CREATIVITY AND ACADEMIC ACHIEVEMENT

Private and Public School Sample

In private schools' sample, regression analysis revealed that the variable of verbal creativity i.e. originality contributed significantly to the variance in academic achievement. It explained 2% of variance in achievement ($r=.41$, $p<.01$, $R^2$ change=.02, $F<.01$) (see table 5.2 (A)). The other two components of creativity viz. fluency and flexibility failed to reach the level of significance in regression analysis. But the results of correlational analysis revealed that fluency ($r=.27$, $p<.01$) and flexibility ($r=.36$, $p<.01$) were significantly correlated with academic achievement (see table 5.1A). The variable of fluency and flexibility had been taken care of by originality (see table 5.1A for detail).

In public schools' sample, all the three dimensions of creativity viz. fluency ($r=.17$, $p<.01$), flexibility ($r=.12$, $p<.05$) and originality ($r=.16$, $p<.01$) were though significantly and positively correlated with academic achievement (see table 5.1B), but in
regression analysis, all the three dimensions of creativity failed to explain variance in academic achievement.

**Boys' and Girls' Sample**

Similarly in the sample of boys, verbal fluency contributed significantly to the variance in academic achievement. \((r=0.72, p<.01, R^2 \text{ change}=0.02, F<.01)\). It explains 2% of variance in academic achievement (see table 5.2 C for detail). Another dimension of creativity viz. originality turned out to be significant in regression analysis. It explained 1% of variance in academic achievement \((r=0.70, p<.01, R^2 \text{ change}=0.01, F<.01)\) (see table 5.2 C for details). The results of correlational analysis indicated significant and positive correlation of flexibility \((r=0.65, p<.01)\) with academic achievement (see table 5.1 C). In regression analysis, the contribution of flexibility had been taken care of by fluency and originality.

Again in girls' sample, verbal fluency contributed significantly to the variance in academic achievement. It explained 2% of variance in academic achievement \((r=0.81, p<.01, R^2 \text{ change}=0.02, F<.01)\) (see table 5.2 D). Further, flexibility also contributed significantly to the variance in academic achievement. It explains 1% of variance in academic achievement. \((r=0.80, p<.01, R^2 \text{ change}=0.01, F<.01)\) (See table 5.2 D). The variable of originality did not turn out to be significant in academic achievement. However, results of correlational analysis revealed that originality had significant and positive correlation with academic achievement \((r=0.74, P<.01)\) (see table 5.1 D for details).

(II) **LEVEL OF ASPIRATION AND ACADEMIC ACHIEVEMENT**

In the present study level of aspiration had come up as the most important factor of academic achievement that contributed to the highest variance in academic achievement.
Private and Public Schools' Sample

Regression analysis of private schools' sample revealed that level of aspiration had the highest contribution in academic achievement. It explained 82% of variance in academic achievement \((r=.91, p<.01, R^2 \text{ change} = .82, F<.01)\) which reflects that higher level of aspiration leads to higher academic achievement (see table 5.2 A).

In public schools' sample, it was observed that level of aspiration contributed significantly to the variance in academic achievement. It explained 64% of variance \((r=.80, p<.01, R^2 \text{ change} = .64, F<.01)\) (see table 5.2 B for details).

Boys' and Girls' Sample

In boys' sample, regression analysis revealed that level of aspiration had the highest contribution in academic achievement. It explained 90% of variance in academic achievement \((r=.95, p<.01, R^2 \text{ change} = .90, F<.01)\) (see table 5.2 C) which was contributed significantly to the variance in academic achievement.

On the other hand, in girls', sample level of aspiration also contributed significantly to the variance in academic achievement. It explained 85% of variance \((r=.92, p<.01, R^2 \text{ change} = .85, F<.01)\) (see table 5.2 D).

(III) ACHIEVEMENT MOTIVATION AND ACADEMIC ACHIEVEMENT

Private and Public Schools' Sample

Regression analysis of private schools' sample, revealed that achievement-orientation, a component of achievement motivation contributed significantly to the variance in academic achievement. It explained 4% of variance in academic achievement \((r=.68, p<.01, R^2 \text{ change} = .04, F<.01)\) (see table 5.2 A). The other two components of achievement motivation i.e. task-orientation and success-orientation did not turn out to be
Summary

significant in regression analysis. But the correlational analysis depicted that task-orientation had significant and positive correlation with academic achievement \(r = .36, p < .01\) (See table 5.1A) Success orientation turned out to be insignificant in regression as well as in correlational analysis.

In public schools' sample, achievement orientation had significant contribution to the variance in academic achievement. It explains 8% of variance in academic achievement \(r = .33, R^2_{\text{change}} = .08 F < .01\) (see table 5.2B). In correlational analysis the component of achievement motivation viz. success-orientation \(r = .15, p < .01\) was significantly and positively correlated with academic achievement. (See table 5.1B), but task-orientation showed no significant and positive correlation with academic achievement. But in regression analysis both these components failed to reach the level of significance. Thus, the variance which was to be explained by task-orientation and success-orientation had been taken care of by achievement orientation.

Boys' and Girls' Sample

In boys' sample, regression analysis indicated that achievement orientation had significant contribution to the variance in academic achievement. It explained 3% of variance in academic achievement \(r = .81, p < .01; R^2_{\text{change}} = .03, F < .01\) (see table 5.2 C). Further task-orientation and success orientation did not turn out to be significant in regression analysis but correlational analysis showed that the task-orientation \(r = .68, p < .01\) had significant and positive relationship with academic achievement (see table 5.1C). Success-orientation did not correlate significantly with academic achievement (see table 5.1C)

In girls' sample regression analysis revealed that all the three components of achievement motivation did not turn out to be significant with academic achievement. However, the
Summary

correlational analysis revealed that all the three components of achievement motivation viz. achievement orientation \((r= \cdot 78, p<\cdot 01)\), task-orientation \((r=\cdot 58, p<\cdot 01)\) and success-orientation \((r=\cdot 50, p<\cdot 01)\) were significantly and positively correlated with academic achievement (see table 5.1 D).

(IV) DIFFERENCE BETWEEN MEANS (ANOVA) AND DIFFERENCE BETWEEN DIFFERENCES

In the second phase, ANOVA was computed to find out the significance of difference between three groups i.e. stream variable viz. Arts, Commerce and Science, between School variable i.e. Public and Private schools and lastly between gender on academic achievement and other independent variables of creativity, level of aspiration and achievement motivation. The major aim was to observe the interaction between different streams, types of schools and the two genders on the above mentioned variables.

ACADEMIC ACHIEVEMENT

The analysis of variance revealed that the Science stream students were significantly higher on academic achievement than of other two streams of Arts and Commerce with F-ratio being 4182.549 which is significant at .01 level (for details see Anova table 5.3 A-1, with means being 555.30 v/s 478.0 and 415 (see general mean table 5.3 A). The findings indicated that science stream students were higher in their academic achievement.

Further, if we look at the school factor, analysis of variance indicated that private school students were significantly higher on academic achievement than those of public schools (540.80 v/s 427.0, F-ratio = 8791.0, p<.01 (see table 5.3 A and 5.3 A-i). It revealed that students belonging to private schools performed better on their academic achievement than one's belonging to public schools.
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On the factor of gender, analysis of variance indicated that girls were found to be significantly higher on academic achievement than boys (493 v/s 473, F-ratio = 267.7, p<.01) (see table 5.3 A and 5.3A-i). It depicted that girls were performing better on the academic achievement than boys.

CREATIVITY AND ITS COMPONENTS

The analysis of variance revealed that Arts stream students were significantly higher on all the three components of creativity than the Science and Commerce streams, with F-ratio for fluency being 94.876, p<.01, flexibility 70.209, p<.01 and originality 21.953 p<.01) (see table 5.3 B-I, C-I and D-I). The mean value of Arts stream was also significantly higher on all the three components of creativity viz. fluency (34.28 v/s 33.5 and 30.01) flexibility (35.11 v/s 33.26 and 31.55 and originality (32.81 v/s 31.65 and 31.05) (See general mean table 5.3 B, C, and D). The results clearly indicated that Arts stream students were significantly better on verbal creativity than the students of other two streams.

At the level of school factor, analysis of variance depicted that private school students were performing better on all the three dimensions of creativity viz. fluency, flexibility and originality than public school students with F-ratio for fluency being 2874.15, p<.01, flexibility 2383.75, p<.01 and originality 2312.87 p<.01 (see table 5.3 B-i, C-i and D-i). The general mean table also revealed that private school students were significantly higher on all the three components of creativity than their public school counterparts (fluency 39.10 v/s 25.40, flexibility 39.25 v/s 27.37 and originality (37.23 v/s 26.41) (see general mean table 5.3 B, C and D for details). It showed that students from private school were significantly higher on their overall creativity than the public school students.
On the factor of gender, Anova indicated that girls were performing better on all the three dimensions of creativity than their male counterparts with F-ratio for fluency being 2050.70, p<.01, flexibility 61.02, p<.01 and originality 3047.48 p<.01 (see table 5.3 B-i, C-i and D-i for details). The mean values also depicted significant differences between girls and boys on all the three components viz. fluency (38.0 v/s 26.5), flexibility (37.41 v/s 29.21) originality (38.03v/s 20.61) (See general mean table 5.3 B, C and D).

Thus the obtained results clearly reported that girls were more creative than boys on all the three dimensions of creativity viz. fluency, flexibility and originality.

The three-factor interaction of stream x school gender on the two components of creativity viz. fluency and flexibility were found to be significant with F-ratio being 26.438, p<.01 on fluency and 17.472, p<.01 on originality (see table 5.3 B-i and 5.3 C-i). On the last variable of originality, the interaction was not significant. The results indicated that females from both public and private schools were significantly higher on the components of verbal creativity viz. fluency and flexibility than their male counterparts in all the three streams i.e. Arts, Commerce and Science. On fluency and flexibility, the interaction depicted that at the private school end, females were outperforming males. Similar differences could be seen in case of Science and Commerce end, where the females were significantly per better than males. Whereas, the females in the public schools were steady but females performed better at all the three levels of creativity as compared to their male counterparts.

LEVEL OF ASPIRATION

The analysis of variance showed that the Science streams students scored significantly higher on level of aspiration than the Commerce and Arts stream students (F-ratio being 1808.05,
p < .01) (see table 5.3 E-i for detail) The general mean table also revealed significant group differences between Science, Commerce and Arts stream, means being (4.82 v/s 4.00 and 3.44) (see table 5.3 E for detail). The results depicted that Science stream students were significantly higher or their level of aspiration.

On the factor of school, Anova revealed that students belonging to private school were performing better on the variable of level of aspiration than the public school students means being 4.96 v/s 3.44, F-ratio being 8470.06, which was significant at .01 level. (See table 5.3 E and E-i. for detail). It indicated that private school students were significantly higher on level of aspiration than their public school counterparts.

Another factor of gender, analyses of variance showed that boys were significantly higher on their level of aspiration than the girls (4.36 v/s 3.83, F-ratio being 791.71, p < .01) (see table 5.3 E and 5.3 E-i for details). The results depicted that boys exhibited higher level of aspiration than girls.

The three factor interaction effect of stream x school x gender on the level of aspiration was significant with F-ratio being 28.00 which was significant at .01 level (see table 5.3 E-i for details). On the variable of level of aspiration, the three factor interaction revealed that at both the public and private school end, boys were significantly higher on level of aspiration than the girls in all the three streams.

ACHIEVEMENT MOTIVATION

On the variable of achievement motivation, analysis of variance revealed that Science stream students were found to be significantly higher on the two components of achievement motivation viz. achievement-orientation and task-orientation than the Commerce and Arts stream students with F-ratio being
The main effect of success orientation was not significant. In the context of mean score, science stream students score significantly higher than commerce and arts stream students, on all the three components i.e. achievement-orientation means being 34.35 v/s 34.09 and 32.6, for task-orientation means being 48.43 v/s 45.20 and 44.54 and success-orientation (21.11 v/s 21.01 and 20.66) (see table 5.3 F, 5.3 G and 5.3 H for details). The above findings showed that Science stream students were significantly higher on their achievement motivation than the Commerce and Arts stream students.

Further, on the factor of school, results obtained from Anova depicted that students belonging to private schools were performing better on all the three components of achievement motivation than the public school students, with F-ratio being 3272.32, p<.01 on achievement-orientation and 2624.17, p<.01 on task-orientation and 1086.31, p<.01, on success-orientation. (see table 5.3 F-i 5.G-i and 5.3 H-i for detail). The general mean table also depicted significant differences between the private and public schools, means being for achievement-orientations 50.26 v/s 41.87, for task-orientation means being 36.94 v/s 30.43 and for success-orientations means being 21.51 v/s 20.50 (see general mean table F,G and H).

On the factor of gender, analysis of variance depicted that boys were significantly higher on achievement-orientation and task-orientation than girls with F-ratio being 2493.16 p<.01 and 2449.72 p<.01 respectively (see table 5.3 F-i and 5.3 G-i). While girls were found to be significantly higher on success-orientation than males with F-ratio being 1086.31, p<.01 (See table 5.3 H-i for detail). Further, the general mean table also showed that boys were performing better on the two components of achievement motivation i.e. achievement-orientation and task-orientation.
means being 49.72 v/s 42.40, on achievement-orientation and
36.83 v/s 30.54, on task-orientation (see table 5.3 F and G for
details). Girls were significantly higher or success-orientation
than boys 22.74 v/s 19.27 (see table 5.3H). The obtained results
revealed that boys were higher achievement motivated in terms of
intrinsic-orientation, while girls were more achievement motivated
in terms of success-orientation.

The three factor interaction effect of stream x school x
gender on the variable of achievement-motivation was significant
with F-ratio being 86.206 p<.01 on achievement-orientation,
9.127, p<.01 on task-orientation, and 12.080, p<.01 on success-
orientation (see table 5.3 F-i, 5.3 G-i and 5.3 H-i for details). The
results from the three-factor interaction effect revealed that at
both the private and public school end, males were significantly
higher on the two components of achievement-motivation i.e.
achievement-orientation and task-orientation than females in all
the different streams. Females from both private and public
schools were found to be better on success-orientation than
males in all the three streams.