CHAPTER SIX

CONCLUSIONS, GENERALIZATIONS AND

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The present study has attempted to investigate the effect of level of aspiration and socio-economic status on performance in a linear programme. The objectives of the study included the development of a linear programme in a segment of biology i.e. 'vegetative reproduction in plants' and preparation of a criterion test to evaluate the entering and terminal behaviour of subjects.

The present study covered the target population of biology students of Higher Secondary Part II classes in English medium schools and Pre-P Medical classes in all the colleges in Chandigarh. The sample was drawn from two colleges and four English medium schools in Chandigarh. The institutions and the sample were selected randomly. The size of the sample was 250 with boys and girls equal in number. The subjects were first divided into high, average and low socio-economic status groups which were further sub-divided into three level of aspiration groups. This division and
Sub-division resulted in nine experimental treatment groups. Each treatment combination consisted of 15 students. The nine experimental groups were:

(i) High socio-economic status and high level of aspiration;

(ii) High socio-economic status and average level of aspiration;

(iii) High socio-economic status and low level of aspiration;

(iv) Average socio-economic status and high level of aspiration;

(v) Average socio-economic status and average level of aspiration;

(vi) Average socio-economic status and low level of aspiration;

(vii) Low socio-economic status and high level of aspiration;

(viii) Low socio-economic status and average level of aspiration;

(ix) Low socio-economic status and low level of aspiration.

The experiment was conducted in the framework of $3 \times 3$ factorial design. It involved three levels of socio-economic status and three levels of level of aspiration. Socio-economic status and level of aspiration constituted the independent variables while the amount of attainment recorded by the subjects was the dependent variable.
The main and the interaction effects of level of aspiration and socio-economic status were analyzed by the analysis of variance.

It may be mentioned that the findings and conclusions have to be considered strictly in relation with the objectives of the study and the delimitations as outlined in the introductory chapter of the report.

It may also be stressed that the generalizations arrived at should be considered relevant and tenable only in relation to the population similar to the one defined for the present study.

Before describing the principal findings of the present experiment, it may be worthwhile to take notice of the following important features of the programme for a meaningful evaluation of the findings.

The co-efficient of reliability of the criterion test was computed using Kuder-Richardson formula as mentioned by H.G.Macintosh and R.S.Morrison in their book "Objective Testing" (p-71). It was found to be .93.

The content validity of the criterion test was established by ascertaining the correspondence between the criterion test and the representativeness of the content structure in relation to the behavioural objectives.
The programme was validated against the internal criteria of error rate, programme density and the external criterion of 90/90. The programme was found valid in terms of these criteria.

The error rate of the programme as a whole was found to be .25 while unit-wise error rate was: Unit I, .16, Unit II, .28, Unit III, .17 and Unit IV, .45.

The programme density was also calculated. It was found to be .14 for the whole programme and .19, .13, .13 and .17 for I, II, III, and IV units respectively.

The sequence progression of the programme studied with the help of scalogram revealed that there was definite indication of errors from high achievers to low achievers showing thereby an appropriate logical connection in terms of performance of high and low achievers on the criterion test. This concludes that there is a logical sequence among all the programme units.

The programme was also evaluated in terms of 90/90 standard. A standard of 95.16 was obtained for the programme.

6.1

INITIAL LEARNING AND POST LEARNING

The significance of the difference in initial learning and post learning among the experimental groups, taken separately, was analyzed by analysis of variance.
The F-ratio for pre-test was obtained to be less than one, i.e. 0.13 for df 8 and 126, it was not found significant even at .05 level of confidence. It may, therefore, be safely inferred that the nine experimental groups did not differ significantly in initial learning.

The f-ratio for the post-test was found to be 14.59. It was significant at both the levels of confidence. It might be inferred, therefore, that the experimental groups differed significantly in post learning. Speaking differently, the differences among the means of post-test scores were attributable to the treatment effects.

6.2

MAIN EFFECTS AND INTERACTION EFFECTS

The main effects of the experiment were three levels of aspiration (high, average and low) and three levels of socio-economic status (high, average and low). The interaction effects of these factors were analyzed by analysis of variance technique.

The F-ratio for the main effects of three levels of aspiration was obtained to be 2.62 for df .2 and 126. This value was not significant at any of the two levels of significance. It may, therefore, be stated that there is no significant difference in the attainment of subjects belonging to high, average and low levels of aspiration.
Furthermore, it may be inferred that level of aspiration as a factor does not influence the performance in a linear programme presentation. Thus, the first hypothesis of the present study which states that level of aspiration significantly affects the performance on the criterion test, is, therefore, rejected. The null hypothesis in regard to the affect of level of aspiration is retained.

It may further be concluded that the differences between the three levels of aspiration are statistically non-significant, implying the acceptance of null-hypothesis. Thus, out of the high (HLQ), average (ALQ) and low (LLQ) level of aspiration, the superiority of one over the other may not be asserted.

The comparison of means of high, average and low levels of aspiration shows the same results. The observed mean of high level of aspiration group is a little higher (75.55) than that of the average level of aspiration group (72.57). The mean of low level of aspiration group (70.26) is a little less than that of average level of aspiration group. These differences in different means are not statistically significant. These differences can be attributed to chance factors. Thus, the third hypothesis of the present investigation which states significant differences between the performance of groups at different levels of aspiration is, therefore, rejected.
The result is in accord with some of the previous findings which established a curvilinear, negative or no positive relationship between academic achievement and level of aspiration. Some of these are: Gould and Kaplan (1942), Holt (1946), Dowd (1952), Rai (1974), Tiwari and Rai (1976) and Sharma (1981).

The results of the present study are in contradiction with the results of Davis, T.N. (1971) who found a significant correlation between level of aspiration and achievement. Possibly, it may be because of different nature of the subject matter.

The F-ratio for the main effect relating to three levels of socio-economic status was calculated to be 55.07 for df.2 and 126. It was found to be significant at both the levels of confidence. It may therefore, be inferred that socio-economic status significantly influence the performance on the criterion test. This confirms, the second hypothesis where in it is stated that socio-economic status significantly affects the performance of subjects on the criterion test. Thus null hypothesis in this case was rejected. The fact that this factor has significant mean square, leads to the conclusion that the means for the three socio-economic status groups differ significantly. The observed mean of high socio-economic status group is higher (84.88) than that of average
socio-economic status group (72.93). The mean of low socio-economic status group (60.57) is significantly less than that of average socio-economic status group. These differences seem to be beyond chance expectation. Therefore, it may be safely concluded that higher level of performance on a linear programme is expected of those subjects who belong to high socio-economic status rather than the subjects belonging to average or low socio-economic status groups. Therefore, it confirms the fourth hypothesis of the present study stating a significant difference in performance of subjects belonging to different levels of socio-economic status.

The results are in conformity with the results of Setter (1969), Pathak (1972), Anand (1973) Venkataiah (1980) and Raj and Krishnan (1980) who have shown a positive relationship between socio-economic status and academic achievement.

6.2.1

INTERACTION EFFECTS

The interaction effects of level of aspiration (LOA) and socio-economic status (SES) were also analyzed by finding out F-ratio. The interaction effect of level of aspiration and socio-economic status was not found to be statistically significant at both the levels of confidence. Therefore, it may be concluded
that the effect of socio-economic status is
independent of the effect of level of aspiration
on performance in a linear programme and vice-versa.
In other words, it could be said that level of
aspiration and socio-economic status do not interact,
when, taken together. In the same manner, it may
be asserted that the difference between the performance
of high, average and low socio-economic status
groups is independent of the high, average and
low levels of aspiration of subjects. This indicates
acceptance of the null hypothesis and rejection of
the hypothesis of the present study which states
that the interaction between the level of aspiration
and socio-economic status is statistically significant.

In view of the foregoing discussion
and analysis of results following conclusions appear
tenable:

- Level of aspiration as a factor
does not influence the performance
in a linear programme presentation.

- Socio-economic status significantly
affects performance of subjects
on the criterion test.

- Higher level of performance on a
linear programme is expected of those
subjects who belong to high socio-
economic status than the subjects
belonging to average or low socio-
economic status groups.
There is no significant interaction between level of aspiration and socio-economic status. It implies that level of aspiration and socio-economic status taken together do not interact with each other to affect performance in a linear programme.

6.3

LIMITATIONS OF THE FINDINGS

The applicability of the conclusions drawn in the present study as mentioned earlier will be determined by the similarity of the conditions between the populations.

Though the conclusions are based upon empirical data, the reliability of the data is affected by the motivation of the experimental subjects during the experiment, the differences of experimental conditions during different cycles of the experiment and other extraneous factors beyond the control of the experimenter. The findings can better be interpreted conservatively by taking into account the sampling errors according to the laws of probability.

6.4

FURTHER POSSIBILITIES

With regard to further possibilities of research in this area, some suggestions may be given as follows:
- The present study may be replicated in combination with one or more variables like creativity, sex, anxiety and achievement motivation.

- The present study may be replicated with programmed material on a topic selected from other courses of study and for a different population.

- Performance of subjects with reference to different styles of programming (branching, Mathetics etc.) can be studied in relation to socio-economic status and level of aspiration.

- A study may be conducted to examine the effects of hope of success and fear of failure in a programmed presentation.

- A study may be undertaken to investigate the effects of educational and career aspirations on performance of subjects on programmed material.