A COMPARATIVE STUDY OF THE ENVIRONMENTAL PRESS AND VALUE-CLIMATE OF CO-EDUCATIONAL AND SINGLE-SEX HIGH SCHOOLS OF ALIGARH CITY

DISSERTATION SUBMITTED
IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE DEGREE OF

Master of Education

BY

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CERTIFICATE

This is to certify that M.Ed. Project entitled 'A Comparative Study of the Environmental Press and Value-climate of Co-educational and Single-sex Schools of Aligarh City', being submitted by Miss Mumtaz Begum in part fulfilment of the requirement for the degree of M.Ed. has been conducted under my supervision, and embodies Miss Mumtaz Begum's own work.

S.T.H. RIZVI
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8.3.1984

A C K N O W L E D G E M E N T

I wish to convey my special thanks and deep sense of gratitude to Mr. S.T.H. Rizvi (M.S. Ed., U.S.A.), Lecturer, Department of Education for his sincere help, numerous, constructive and wide-ranging suggestions and guidance. Mr. Rizvi not only helped me in understanding this new area of co-educational study but has also been a constant source of inspiration throughout.

I am also happy to acknowledge the gracious co-operation of the Principals, Staffs and Students of A.M.U. Girls'High School, A.M.U. S.T. High School and Our Lady of Fatima Higher Secondary School, without whose interest, inspiring and painstaking co-operation, it would have been difficult to make this study possible.

I would fail in my duty if I forget to express my thanks to Mr. Zakir Ali Beg, whose neat and skilful typing has made it possible for my work to appear in words.

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C O N T E N T S

C H A P T E R -I

INTRODUCTION

* Objectives of the Study
* Definition of the Study
* Assumptions
* Hypothesis
* Procedure in Out-line
* Delimitations
* Conceptual Model of the Study
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Almost a hundred years ago the honorable Dudley Campbell published the small ephemeral and prophetic pamphlet entitled "Mixed Education of Boys and Girls in America". Though it had little practical results at that time and might have been forgotten. But the present America gives an impression that the prophetic saying of this great educationist could never be forgotten and it started learning fruits in the 20th century. Mixed schooling has been taken by the educators of the country as one of the most potential agency for moulding the human mind and characteristics. The moral power of sex upon sex has been regarded as neither useless nor dangerous today and this is perhaps the reason why greater and greater number of mixed schools are emerging out at the cost of single sex schools. The philosophy which dominates the educator is that if, boys and girls, young men and young women may dance and sing and generally play and amuse themselves today with advantage, no special danger can be apprehended if they should also study together.

Such an unqualified support for co-education has been extended mainly for social reasons, including preparation for life in a bisexual world and the good influence that each sex believed to have on the conduct of the other. It is further believed that co-education will give a fresh life to the school societies and stimulate friendly academic rivalry

between the sexes. Seemingly upto this day co-education is rarely challenged in the primary school through out the world except a few lightly conservative countries. But it has the same productive value for the secondary stage is being debated today, even in western world. To be sure whether it is better to educate boys and girls apart or together especially at the secondary level is a question, that once again needs re-examination, as regards to its worthiness and productivity, as compared with the single-sex schools. In fact, to determine whether one type of school is better than the other is a task which is far from easy. The range of the subject is so great that no single research encompass all the relevant variables together in one investigation.

The point on which all seem to agree is the purpose for which the schools exist in our society. It has rightly been agreed upon that a school is an institution to which it delegated the responsibility of upbringing of young people for many hours a day. It is no longer a place merely for the learning of knowledge but is concerned with a social and emotional development of its pupil. Each men and women of today have to contribute to the world and to the life of the schools and their different contribution, stem from different qualities or characteristics.

The aim of an educational programme in India, as in any other part of the world, is to produce an adjusted, balanced, integrated and developed human being. The adjustment, balance, integration and development aimed at has got to be both internal as well as external. The individual should be at peace within himself before he can be at peace with others. In order to produce such an adjusted and integrated human personality, an important condition is that the child is not allowed to develop any tensions within itself. This means providing an environment both in an outsde the school which would not produce any tension in the child. and at the same time developing, by way of safe-guard, that psychological strength and confidence which would help them to face the tension successfully whenever they rise without succumbing to them. The educational soundness or otherwise of a system of co-education has threfore, to be judged on the ground whether a co-education or single-sex school is tension oriented or non-tension oriented organisation. A point of caution is to be kept in mind here, as recommended by the Education Commission (1959) that the possibility of co-education creating occasions for tensions is closely connected with the age, psychological and physical maturity of the students on the one hand and the school, home and community environment of the child on the other hand.

The fact is that there can be no one universal anser in connection with the desirability or otherwise of co-education for all stages of education and all kinds of social environment. It is because of this reason the Indian system of education has not emphasized on the existence or non-existence of either type of school. There can be no hard and fast rule regarding the pattern of admission. However, the choice of taking admission in single-sex school or in co-educational schools depend very much on the society or the community and the availablity of the schools.

It has also been argued that as the child attains the age of adolescence he/she lacks the relatively greater maturity of youth, the possibility for psychological tensions and complexes and moral lapses in co-education becomes greater. Further when climatic conditions, social customs and environment also help accelerate earlier and greater sex consciousness, as in the case female in our country owing to the tropical climate and social customs like early marriage, the chances are more for co-education to be harmful. But this argument can be defeated by its counter argument that in exclusively boys' school there are more cases of homosexuality (Dale (1970), Vol. II, P-114) and in exclusively girls' school female teachers have shown more potential of creating tensions among girls (Dale-Vol.II, P-213).

During recent years, once again breezes of co-education have blown across the educational world as discussed above. Co-education was partly accepted and partly opposed. Richard Greenough (1970) referred "Co-education as a world trend." It is undoubtedly true because more girls are sharing classrooms with boys, at all levels in a growing number of co-educational schools and around the world. Precisely speaking the arguments more emphatically give in support of co-education have considerable intuitive appeal that co-education provides a more normal or natural social environment. Those against it seem equally compelling that co-education neglects the existence of sex difference in interests and aptitudes.

In view of the above fact, the investigator is quite clear in her mind that to do full justice with the problem and to find out the areas of differences and similarities, it is essential to examine the point of views extended by the researches conducted in the developed countries during recent years, before she arrives on definite conclusion and conducts her own study.

In Great Britain, for instance Byrne (1978) has called for a national debate on this issue. A major assumption underlying the debate on co-education Vs.Single-sex is that there are critical differences between the social

psychological environment of the two types of institutions (Feather 1974).

Ormerod (1975) stated that sex linked polarisation of subjects preferences were more marked in co-educational than in single-sex school.

Shapiro (1980) in his report on "The Feminized School" reported that sex differences on achievement have been shown to be related to societal expectations and influences.

It has commonly been argued that co-education at the secondary school level necessarily prepare children to take their places naturally in the world of men and women. It is contended that the social environment of the co-education would be less artificial than that of the single-sex schools and the adoptation learned in an environment that more accurately mirrored that of the wider social context would better equiped children to adjust to the adult world beyond the school.

In Britain, Dale(1969, 1971) investigated that co-educational schools were generally preferred to single-sex schools by both teachers and students. The school atmosphere was thought to be more congenial in co-educational schools and students saw their teachers as friendlier and more helpful. Single-sex schools were perceived to involve stricter discipline and teachers in these schools, were seen as more distant.

Studies of the related literature, thus, brings into light three different schools of thought:-

a) There are persons with solid arguments who support the view of co-education at all the levels.

b) Some aprove the existence of co-education up to their level of pre-adolescence but they opposed mixed type of schooling for the adolescence.

c) The third group emphasizes the existence of separate schooling system for the two sexes. They however, agree that the education of both the sexes may be limited to the primary stage. But they are deadly against the co-educational system at the secondary and higher secondary level.

Number of studies related to the question of suitability and usefulness of the co-educational institutions have been conducted in the western countries and it can be found that most of the studies were conducted on the general -basic assumption i.e. that are critical differences between the social psychological environment of the two types of institutions.

Inspite of the findings based on the above assumption, it stands to reason that in order to achieve an understanding of the effects of the two kinds of institutions on their students, a thorough analysis of their respective environment is still needed, such type of research is practically less

possible in western countries because of the fact that there is an increasing trend of declining availability of single sex schools. Because of the unavailibility of the school, authenticity of the difference in the environment of two types of school may hardly be established.

Providing co-educational or single-sex school is of great significance in the light of the Indian condition. India is a comparatively less progressive rather more conservative country, family traditions, religions, customs pay an important role in determining the type, the quality and the system of education of the young children. Similarly, economic disparity among people, caste system and the social status of the women in the society are also the factors which have the potential of influencing the education of the girls.

Therefore, as compared to western countries, in India there are still large number of separate schools for boys and girls rather than co-educational institutions. It is one of the important reason why the investigator is interested in making a comparative study between the environment of three different types of institutions. There is no doubt that an increasing trend can be left among the middle income group of population in India who are more interested in sending their children in co-educational institutions rather than separate schools. Hence, any study conducted under existing Indian

situation may, perhaps be more authentic and valuable. Indian society is still stratified and inagilitarian. The society can safely be divided into three distinct socio-economic strata. There are highly conservative groups who do not want to deviate from their cultural heritage customs and traditions. These are the people who may preferred to keep their girls out of school rather than sending them in co-educational schools. Just opposed to these groups, there are persons belonging to various religions may prefer to send their children in co-educational institution as compared to single-sex schools. This situation may further justified the need of a more comprehensive comparative study of the environmental effect on the value climate of the single sex and mixed schools. It is because of these vital reasons the investigator has become interested in the present study.

The present study aims at finding out the differences between the co-educational institutions and single-sex schools in respect of their environment and their value-climate and for a purposeful comparision and therefore, the title of the present investigation reads as :-

"A Comparative Study of the Environmental Press and the Value Climate of Co-Educational and Single-Sex High Schools of the Aligarh City"

Definition of the Terms:

Comparative Study: Examining two or more groups to establish similarities or dissimilarities.

Environmental Press: The aggregate impact of educational and social interaction within the school complex that facilitates or interferes with the gratification of students' behaviour and needs.

Value-Climate: Appraisal of worthiness of prevailing values within the school system.

Single-Sex School: Separate school for boys and girls.

Co-educational School: The schooling of boys and girls in the same institution together.

High School: IX & X Classes.

Assumptions:

This study is based on the following assumptions:-

1) The students of single-sex school perceive their school environment as placing less emphasis on academic achievement and scholarship as compared to their counter-parts co-educational schools.

2) Compared with the single-sex School, co-educational school's students perceive their schools as placing more emphasis on control and discipline.

3) Students of Single-sex school perceive co-educational school as placing greater emphasis on pleasureable non-academic activities.

4) Students of the single-sex girls' school perceive their school providing a negative social-emotional environment as compared with their counter-part single-sex boys' and co-educational schools which provide a positive social emotional environment.

Under the above assumptions, the investigator is in the first place interested in finding out the dif erence in the environments of the three schools as perceived by their students. In the second place, the investigator is equally interested in finding out the difference between various factors as perceived by the students of both the sexes as well as within the co-educational institution. Thirdly, the interest of the investigator lies in investigating the difference as regards to the value judgement of students of both the sexes in their respective schools.

Hypothesis:

With the above assumptions and interests the investigator has formulated the following hypothesis:-

1) The students of the co-educational institutions perceive the environments of their schools as different from their counterparts, single-sex boys' and single-sex girls' schools.

2) There is no significant difference between the sexes in the preception of the school environment within co-educational school.

3) The single-sex girls' school perceive theco-educational school's and the boys' school's environment as facilitating and putting less emphasis on control and discipline.

4) There is no significant difference between the environment of the co-educational institutions an the single-sex male schools as perceived by the students.

5) There is no difference among the similar sexes of the three schools as regard to four factors of the environmental press.

6) There is no significant difference in the value-judgement between the single- ex male and co-educational institutions.

7) There is difference between the value judgement of the two sexes in the same environment.

Procedure in Out-Line:

Three schools of Aligarh city namely: Aligarh Muslim University, S.T. High School, Aligarh Muslim University, Girls' High School and Our Lady of Fatima Higher Secondary School - were selected for the purpose of this study.

The investigator has concentrated on these three schools because of the following consideration:-

1) The population of these schools is comprised of almost of the same socio-economic status.

2) The social cultural background of the children of these schools is also to a certain extent similar.

3) Finally, the ratio of male and female teachers in these schools is also same.

As such, the effect that is likely to take place because of the variation in these factors have not been included in this study.

Students proposed to be included in the present study were of the age group of 14 to 16 years from English medium sections. The investigator selected 50 students from IX &X classes of each of the three schools under-study and they were

served the two questionnaires for the responses.

Delimitations:

In view of the limited time and resources available at the disposal of the investigator, this study has been delimited as follows:

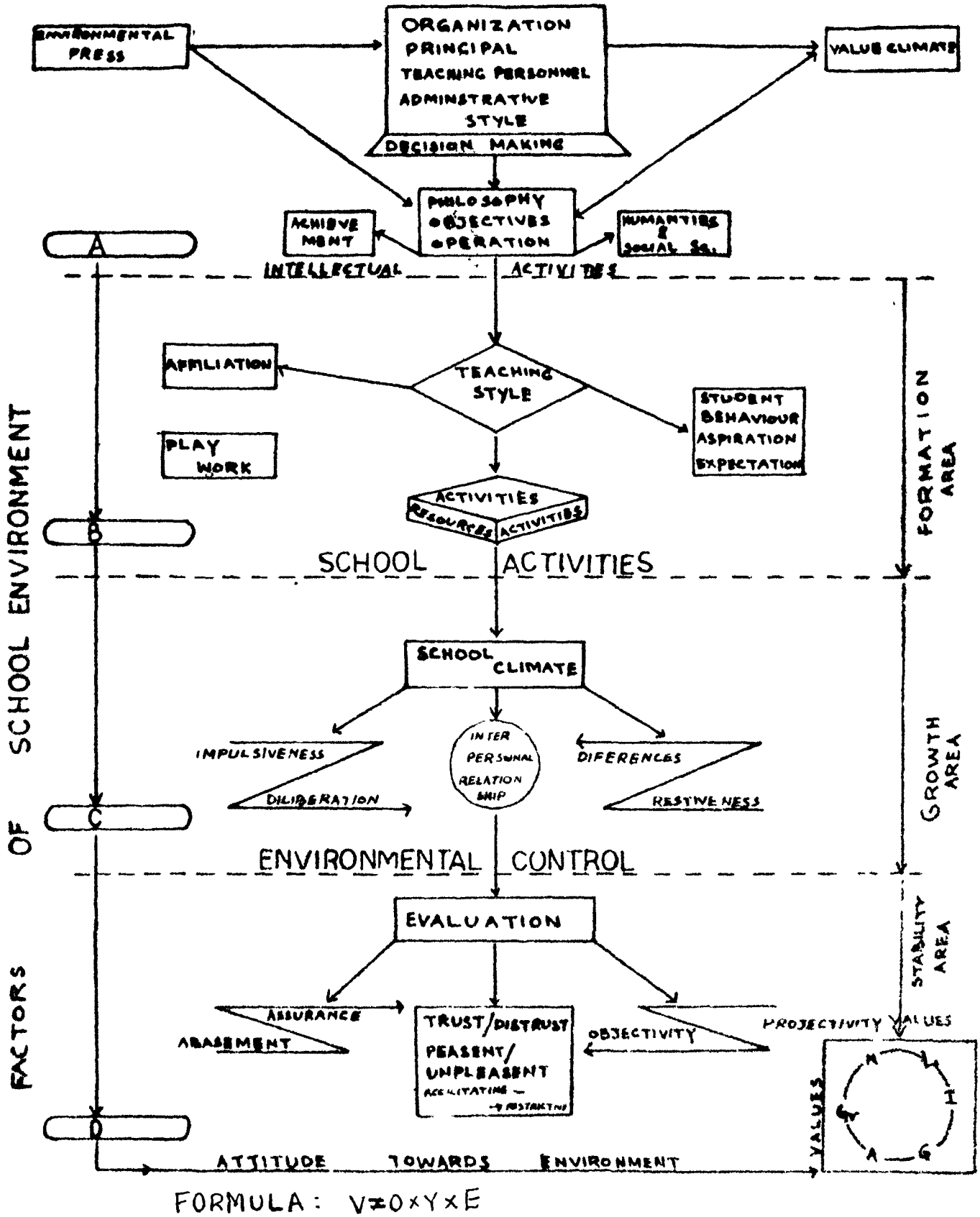
1) The study was confined to only three schools, one exclusively for boys, one for girls and one for mixed.

2) The variables which are expected to influence value climate and the environment of the children were not control because all the three schools to a great extent belong to the same homogeneous type of socio-economic status and therefore, influencing factors of the environment to certain extent are similar in all the three schools.

3) An important variable that is student achievement could not be included in the study because of the limited time at the disposal of the investigator.

4) Similarly, the variable Teacher-Pupil relationship has not been included in this study due to the lack of resources and apathy to the teacher towards the investigation.

CONCEPTUAL MODEL OF ENVIRONMENTAL PRESS AND VALUE CLIMATE INTERACTION



FORMULA: $V = O \times Y \times E$

5) The single-sex boys' and girls'schools are maintained by the Aligarh Muslim University whereas the Co-educational school is maintained by the American Missionary, so their school organization, administration, accomodation, standard and other facilities are to a great extent alike.

Conceptual Model of the Study:

A consolidated conceptual model of the present study has also been presented herewith an understanding that the reader, may get an overall view of the study.

In this model, an effort has been made to show the interaction between the factors of educational organization with the environmental factors and their commulative effect on the formation of the values.

The whole model has been divided into four quardrants. Factors of the quardrants have been shown in the boxes.

The box in the middle shows the school organisation, management, administrator, number of teachers(male & female) and administracive style. The right hand box has been identified as environmental press and on the left it is value climate. Just below the middle box, it shows an educational

philosophy, school objectives based on quality and quantity. The whole quardrant is press by strong Intellectual Orientation represented as 'A'. It is the environment that presses the organization to move under the determinants of the operational objectives. The second quardrant 'B' represents the area of school Activities consists of teaching style, social orientation and play-work. The teaching style and other activities depend on school resources and teachers characteristics of developing effective learning-teaching environment which are also dictated by the schools' philosophy. The third quardrant 'C' represents the area which determines the quality of teacher-pupil and pupil-pupil relationship. The fourth quardrant 'D' has been assigned to the attitude towards the environment. The effect of the environment on students attitudes as pleasant Vs. unpleasant, facilitating Vs; restrictive, trust Vs. distrust, educative Vs. non-educative and positive Vs. negative have been presented in this area.

The conception in this model shows that the values of the students pass through three phases, First and Second quardrant are the formation area and Third has been termed as the growth and the Fourth is the stability area. The values of the students can however, be determined by a combined effect of the school organisation and the environmental press multiplied by the years of schooling of the students:

i.e. $V = En \times Y \times O$

where:

V = Value

En = Environment

O = Organizational style.

Values, however, are not considered as independent variables, they are interdependents as has been shown in the left corner of the model.

Division of the Chapters:

The whole study has been divided in six Chapters.

The First Chapter entitled as the INTRODUCTION, which includes the Objectives, Definition, Assumptions, Hypothesis, Procedure in Outline, The Delimitations and the Conceptual Model of the Study. The Second Chapter is related to the Review of PREVIOUS RESEARCHES explaining various studies conducted in relation to the present study. The Third Chapter DESIGN OF THE STUDY includes Explaination of the Measures, Control Variables, Sample, Reliability and Statistical Technique and Procedure of the Scale. The Fourth Chapter refers to the data of the Value-Climate and Environmental Press followed by their Statistical Analysis. The Fifth Chapter INTERPRETATION, CONCLUSION & SUGGESTIONS

discussed the findings of the study and states some suitable suggestions for future study and conclude with the summary of the study conducted. The concluding Chapter VI named as APPENDIX consists of the two questionnaires, scores obtained by the three schools and the bibliography.

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C H A P T E R -II

REVIEW OF PREVIOUS RESEARCHES

* Mixed or Single-Sex School.
* A Semantic Differential Comparison of Certain Attitudes of University Students from Co-Education & Single-Sex School Towards Their Schools.
* The Influence of Sex, Achievement Level and Social Class on Junior School Children's Attitudes.
* The Academic Progress of University Students from Co-Educational & Single-Sex Schools.
* Co-Education, Values and Satisfaction with School.
* Subject Preference and Choice in Co-Educational and Single-Sex Secondary Schools.
* Influence of Student Ability and Sex on Students' Attitudes Towards Teachers.
* Women, Equality and the Public High School.
* The Feminized School.
* Sex Role Expectations of Classroom Teachers.
* Sex Similarities in Children's Activity, Attention and Arousal.

Seemingly the empirical studies so far done in connection with the co-educational and single sex school have failed to establish the superiority of one over the other. Countries lying on the other side of the globe and also most of the European countries show a comparatively increasing tendency in favour of co-educational institutions almost at all levels. But the sparks of discontentment can be witnessed now and then by the growing indiscipline among youths. The very existence of the youth cult, the increasing number of the unmarried couples, the growing disregard towards marriage institutions are sufficient reasons to provoke the sensible thinkers, educators, sociologist and the researches to give a second thought to this controversy. Though during recent years this controversy could attract quite a few research workers, but the very facts that more researches are underway show that the controversy still exists and even in western countries no compromising formula could be evolved. The problems in most of the middle-east countries and in India are of different nature from those of western countries and so is the difference in the approaches regarding the usability or otherwise of the co-educational institutions and single sex schools.

In the Report submitted by National Committee of Women's Education (May 1958 - January 1959) under the Chairmanship of Shrimati S. Panandikar (Director of Education, Bombay), the controversy regarding co-education may be considered as

magnum opus of all such studies ever conducted in this country.

The committee recommended primary education as a general policy, but for the middle and secondary education the committee underwent with warm arguments and finally they came forward with certain specific conclusions- firstly, that at the middle stage more and more co-educational institutions may be started subjects to the condition that adequate attention is paid to meet the special needs and requirements for the girls. Secondly, for the secondary, however, the committee recommend the establishment of separate girls' schools especially in rural areas, at the same time leaving parents full freedom to admit their girls to boys' school if they so desire.

This recommendation of the committee has been claimed to be supported by the Indian constitution and as well as experienced by some other countries like U.K., Germany and Russia. The main reasons for these recommendations regarding co-education at the secondary stage of establishing separate institutions for boys and girls in rural areas was based more on various sociological and economic reasons rather than on psychological significance. However the constitution does not seem to be indifferent about the importance of co-education at the secondary level. But the committee was of the opinion that all possible efforts should be made

to remove the genuine difficulties and valid apprehensions that exist today in regard to co-education.

The committee suggested that in order to achieve the end, special care should be taken to recruit the right type of head as well as staff for co-educational schools.

The trend towards establishing more and more co-educational institution is not limited to India but it has got a world wise support. As early as 1940's among Asian countries Russia pioneered in this directions. The result of their research were in favour of co-education.

The history of the Western world is all together different from that of Asian countries. The state schools of the U.S.A. have right from the beginning for boys and girls together.

The Scottish schools one traditionally co-educational. In Wales under the intermediate Act of 1889 many schools had to be built for the two sexes together because of the sparseness of the population and the same policy was applied in the rural parts of England after the Balfour Act of 1902. During the last decade, however, the proportion of co-educational secondary schools has been increasing rapidly and in 1968 there were 3,345 mixed compared with 2,231 single sex schools(Statistics of Education-1968).

Inspite of the facts that most of the western countries have practically switched over to the co-education at all levels of educational system. The Asian countries have also to a great extent have theoritically accepted the importance of co-education at all the levels and most of the countries have also switched over to the some pattern but surprisingly the controversy is still as much alive today as it was 50 years back.

Though the researches for many years have produced results which were favourable to co-education. In this chapter an effort has been made to explain the reviews of those studies and research results which compare co-educational and single sex schools in their influence on the social and emotional development of pupils and teachers and many other aspects regarding sex differences which influence pupils and teachers in school activities and their academic achievements.

Following are some exhaustive reviews of the related controversy:-

R.R. Dale (1969,71) came forward in this controversial field with two volumes of "Mixed or Single-Sex School?"

The first volume is about pupil-teacher relationship and the second volume deals with some of their social aspects of the two types of schools.

The two books analysed and appraise the experience of teachers, ex-pupils and pupils of co-educational and single-sex school mainly through their own reports. Dale's research has concentrated on respondents' attitudes of their schools and to varying aspects of schools life, with a brief look into a few effects of the schooling on their lives afterwards. The most important samples used those of teachers and of ex-pupils who had each taught or been taught in both kinds of school.

The first volume concerned with teachers and pupil teachers relationship. Teachers in secondary schools were seen to be strongly in favour of co-education and those teaching in co-educational schools almost unanimously preferred single-sex schools. "The principal opposition was shown to come from two sources, namely teachers who had had no direct experience of co-education and were essentially basing their attitudes on ignorance and a stereotyped prejudice and those women who understandably feared that their opportunities for promotion to headships would disappear if all schools were co-educational."

Dale's study also stated that a few teachers thought that the interests of the sexes diverged too much for them to be taught together, and others that academic standards might suffer. Support for co-education was mainly for social reasons,

including preparation for life in a bisexual world and the good influence that each sex of pupil and of teacher was believed to have on the conduct of the other. Additional reasons were the fresh life given to school societies, the strong effect of increased breadth of interests, the stimulation provided by the greater variety in school life and the beneficial results of a friendly academic rivalry between the sexes.

Dale's two special sample of teachers, almost 500 in all, who had taught in both types of school were separated out from the others. They were strongly in favour of co-education, in one sample the majority was 60% of those teachers who themselves were educated in co-educational school; in the second sample (analysed differently) those in favour were 90% of men, 80% of women teaching in co-educational schools, with small percentage undecided.

The chief findings of the Dale's second volume "Mixed or single-sex schools"are outlined as — "The ex-pupils of the co-educational schools reported themselves as having been happier at school than did those from single-sex schools and they also found the school atmosphere pleasanter." Usually these results are more consistent and stronger for the women than for the men.

Dale found that in the school project the 17-year-old co-educated girls gave higher estimates than those in girls'

school for "kindness" as opposed to "unpleasantness" (highly significant), for "enthusiasm" as opposed to "apathy" (approaching significance) and for "variety" as opposed to"monotony" (substantial but not statistically significant). In the "check" questionnaire more of the 13-year-old-co-educated girls than of their opposing group estimated their school to be "lively" as opposed to "dull".

P.C. Miller(1971) & R.R. Dale(1971) conducted study entitled "A Semantic Differential Comparision of Certain Attitudes of University Students from Co-educational and Single-Sex School Towards their Schools".

This study suggested that there is an appreciable difference in atmosphere between co-educational and single-sex schools (Dale, 1969,71. For example, single-sex schools seem on average, to be stricter in discipline, rather less happy and to have less pleasant relationships amongst the staff and between staffs and pupils. To extend the exploration of this field the semantic differential technique developed by Osgood, Suci and Tannenbaun (1957) and also reviewed by Heise(1969), was employed, students rated concepts, such as 'my school', on a series of seven-point scales the poles of which were defined by pairs of objectives such as good/bad, hard/soft, etc. Any such scale loads on one of three different and independent factors labelled by Osgood et all (1957) "Evaluation", "Potency" and "Activity".

Scores on the "Evaluation", "Potency" and "Activity" of four concepts concerning school and four about the University students. The women from girls' schools tended to evaluate "my school" and "school-teacher" lower than did the co-educated women ($P < 0.1$ and $P < 0.2$, respectively). On the pleasant/unpleasant scale within the evaluation of "my school" both co-educated men and women rated their schools as more pleasant than did men and women from single-sex schools ($P < 0.05$).

The result shows that co-educated students rated "school", "teacher" and "classroom" as significantly less potent than did those of from single-sex schools. The latter saw "university" as less potent than "my school" ($P < 0.01$, "lecture-theatre" less than "classroom" ($P < 0.05$), while the co-educated did not.

Joan C. Barker Lunn (1969,70,72), conducted a study to find out "The Influence of Sex, Achievement Level and Social Class on Junior School Children's Attitudes". For the purpose of this study he employed Attitudes Scales measuring various aspects of school life to approximately 2,000 third and fourth year junior school children. These scales were derived empirically, each was made up of a number of statements made by children during group discussions and selected after factor analysis and scalogram analysis, intercorrelations of the scales with each other and also with certain external data. Further, he attempted to examine the influence of sex, achievement level

and social class on pupils' attitudes.

Clear sex differences appeared in the attitude scores: girls tended to have more favourable school related attitudes, boys tended to have a better academic self-image, to be better socially adjusted and to be less anxious in the classroom situation. In all attitutdes areas, brighter children tended to have more positive attitudes, also the tendency for more favourable attitudes was found for middle class children in contrast to those from working-class homes. The findings did, however, suggest that the different attitudes of pupils of different social classes could partly be accounted for by their difference in academic performance but this was not the full explanation.

Banker Lunn (1972) investigated ten attitudes areas. Six of these concerned school-related attitudes-for example attitude of school; interest in school work, importance of doing well, attitude to class, other image of class and conforming vs non-conforming. The other four were concerned with the pupils' personality and social relationship: they are teacher relationship, academic self image, anxiety and social adjustment. The attitude scores were examined in relation to sex, achievement level and social class.

Lunn's findings concerned with sex differences on the whole agree with other published work. Although most of the studies have been restricted to measuring general attitudes to school and teacher (Fitt, 1956; Fox et all -1964, Sears-1963). Other workers (Fitt,1956; Tenenbaun-1944, Wisenthall-1965).

Lunn found that children of above average achievement had more positive attitudes than less able children.

Many other studied of the relationship between attitudes to school and achievement have consistently obtained significant findings. For example:- Jordan (1941), Arvidson (1956), Wall et all (1963), Shinn (1956), Mc Gawvran (1955) and others have reported studies in which pupil attitudes were significantly related to academic success. The findings show that the more able children have superior attitudes and in such type of children achieve more academically and thus to a certain extent one might expect him to obtain greater satisfaction.

So far as the influence of social class is concerned, Fitt (1958) in New Zealand and Coster (1958) in the United States, concluded that pupils of higher social class had better attitudes to school. The result of Barker Lunn studies show that with the exception of "other image" and conforming attitude more positive attitudes tend to be associated with boys from middle class homes and more negative feeling with those from working class homes. For the girls, nowever, half the scales showed a significant relationship with social class(personality and social relationship) and the other half with the exception of importance of doing well showed no such relationship.

Thus, the different attitudes of pupils of different social classes can partly be accounted for by difference in academic performance.

Mc Cracken (1969) studied "The Academic Progress of University Students from Co-educational and Single-Sex Schools". He analysed the first year results of students for three successive years (over 5,500 students) and found no consistent pattern of difference between students from the two types of school, though those from single-sex schools had slightly fewer failures in two years out of the three. His findings are of little value for evaluating the comparative progress of students from co-educational and single -sex schools.

Dale & Miller (1972) further studied the difference of the Academic Progress of University Students between Two Types of School. They controlled several variables, including attainment on entry to the university, by using matched pairs.

They compare the first-year progress of university students from co-educational schools with those from single-sex schools was made by a matched-pair procedure. All students who met the A- level criteria for matching were extracted from those who took the examination of the Welsh Joint Education Committee (WJEC) in a three year entry to Welsh University Colleges, with first-year results unknown to the selectors. Variables matched or separated were Arts/Science, sex, population of school area, social class, university institution, and expects of A- level attainment, namely , number of subjects taken, best subjects, average grade and number of attempts. In Arts there was virtual, but in Science the co-educated made slightly the better progress, significantly so by comparison of failures.

Thus, the stanine grade results in this study show little difference between co-educated and single-sex educated students. The difference reaches statistical significance on a chi-square test for matched-pairs (chi square= 4.17, $P < 0.05$).

N.T. Feather (1974) focused upon difference between co-education and single-sex schools both in regard to the relative importance assigned by students to different values and in regard to their expressed satisfaction with various aspects of the school situation.

In "Co-education, Values and Satisfaction with School" Feather studied nearly 3,000 boys and girls from the two senior classes in eight Adelaide, Australia, Co-educational & single-sex secondary schools. They were asked to ranked sets of values from the Rokeach Value Surveys first in order of importance for themselves (own values) then in the order they thought their schools would emphasise them (school values). They then completed a modified form of the Cornell Job Description Index and a rating of happiness with school. Factor analysis indicated basic similarities across schools in the ordering of both own and school values, but no factor emerged contrasting average value systems for co-educational vs single-sex schools. Feather also found that boys in co-educational schools were more satisfied with classmates and teachers than were boys in single-sex schools. His results were, thus, related to many other theory and research.

Dale (1969) reported that there was a tendency "for the difference between the attitudes of boys in boys' school and of boys in mixed schools, towards their school life, to be sharp than are the comparable differences between the two groups of girls (page-232).

A study reported by Jones, Shallcrass and Dennis (1972) conducted in New Zealand was less positive toward co-education. Students in a boys' school, a girls' school and a co-educational school completed items from a questionnaire used by Coleman (1961). The authors were interested in testing Coleman's suggestion that status in the adolescent society of the co-educational secondary school may depend more upon popularity them up on scholastic or intellectual achievement, with a consequent emphasis upon "rating and dating". Hence co-education may have a stullifying effect on intellectual activities and "may be inimical to both academic achievement and social adjustment (Coleman, 1961, page-51)".

Feather, infact, designed to provide information about the effects of co-education in the Australian context, using a limited sample of schools drawn from the Adelaide metropolitin area.

M.B. Ormerod (1975) investigated "The Subject Preference and Choice in Co-educational and Single-Sex Secondary Schools". He studied over 1,204 pupils in 19 secondary schools. In England and Wales pupils are confranted with subject choices at an earlier

age than in most other countries (Phillips -1969). These choices are most frequently offered at the end of the third year of secondary education and are major determinants of the direction taken by the more able pupils in their studies even at the tertiary level (Dainton -1968).

Ormerod examined that how sex-stereotyping and liking and disliking of teachers may affect subject preference and subject choice in single-sex and co-educational secondary schools.

Many reports on subject choice in secondary schools (Lewis-1972) have concentrated on sixth-form specialisation in spite of an emphasis in the Dainton Report (1968) and by Phillips (1969) that earlier choices are of crucial importance. Selkirk (1973) has appealed for research into the earlier stages of the process of subject choice where, at around age 14, choices have three main costraints:-

1) Optional subjects are timetabled against each other in a bewildering variety of ways (Pheasant-1961).

2) University entrance requirements often demand particular G.C.E. O-level)subjects (e.g. French for Scientists or Latin for Historians).

3) Potential university aspirants are generally expected to take eight or more subjects, leading some pupils to choose subjects for which they have no distinct preferences measured the preference by using a grid method developed contemporaniously with that reported by Duckworth and Entwistle (1974).

In the variety of studies cited by Dale (1974) it has been noted that the greater preference for science and mathematics was found among girls educated in single-sex school in comparison with their co-educated sisters.

In his study Ormerod found that sex-linked polarisation of subject preferences were more marked in co-educational than in single sex schools. An investigation of the effect of attitudes towards teachers showed a relationship between liking for teacher and subject preference, but not subject choice. The results are discussed in relation to the current reorganisation of secondary schools a long co-educational, as well as comprehensives lones.

Betty J. Haslett (1976) while investigating "The Influence of Student Ability and Sex on Students' Attitudes Towards Teachers," hypothesized that :

1) Low ability students would have more negative attitudes towards teachers than average ability or high ability students.
2) females would have more positive attitudes towards teachers than males.
3) An interaction effect between student ability and sex was hypothesized with low ability males having the least positive attitudes towards teachers and high ability females having the most positive attitude towards teacher.

Haslett selected the concept of "good teacher" to measure the students' perception of a teacher and his educational role. In addition student evaluation of the concept of a "good teacher"

would reveal students' attitudes toward teaching in general and their judgement of the various criteria used to evaluate teaching.

On the basis of the hypothesises, Semantic differential scales were used to measure about 667 high school students' attitudes. Haslett found that low ability students had significantly less positive attitudes toward teachers than average high ability students. This was interpreted as reflecting more negative educational climate surrounding low ability students. Females had more positive attitudes towards teachers than did males. This was interpreted as reflecting the greater number of negative contacts males have with teachers. There was a significant interaction effect on only six scales; Originally, demandingness, showing favouritism, decisiveness, availability, experience and competency. Overall, in order of most positive to least positive attitudes towards teachers, the student groups were ranked high ability males, high ability females, average ability males, low ability females and low ability males respectively.

Haslett in regard of his study referred that Broookover (1965) found differences in performance of high and low ability students due to the expectations of different levels of competency held by both teachers and students for students who considered "bright" or "dull".

In a study of Urban Ghetto School Rist (1970) argued that teachers have an "ideal-type" for the successful, achieving student and evaluated their students on the basis of how well each student met those expectations.

Sex as well as ability, is another important learner characteristic that partially determines student participation in the educational process. Brophy and Good (1970) found that females had a lower rate of initiation in the classroom. Zonder & Van Egmond (1963) found that females were less active and less influential than males in mixed-sex, tasks oriented groups. Good et.all (1973) concluded that sex differences in classroom treatment of students rather than sex of the teacher. Females had a higher percentage of positive contacts with teachers although males. had a greater number of total contacts with teachers and had none response opportunities in the classroom.

Cohen (1970) argues that in the complex social system of a classroom cause and effect are multi-directional: students influence one another and the teacher, influences the learning of the students and the context influences all these interaction.

Rosenthal (1973) found that created a warmer social emotional climate, gave more feedback, taught more material, and gave more opportunities to respond and question to expected high activities.

Good, Sikes & Brophy (1973) found that teachers treated high and low ability students very differently. High achievers received more positive contact from the teachers, initiated more contacts with the teacher and had more options to respond than did low achievers. Low achievers, in addition received more criticism from their teachers.

Bea Mayes (1977) focused on the "Women, Equality, and the Public High School". He stated that "As a gatekeeper in the institutional web of our country, the high school is in a position to shape the expectations and choice of the students. Equality of individuals is one of the basic teachings of the high school. Does the public high school in its operation demonstrate equality between men and women ? Recent changes in women's lives have been dramatic. In disregard to of the consequences, the high school continues to demonstrate a sexist orientation in its organization and in the differential treatment accorded student. Recent federal legislation (American) required school systems receiving federal monies to set up means ofor complying with federal regulations by October 21,1975 and to complete a self-evaluation on sex discriminatory practices by July 21,1976.

Amundsen (1971) points out "sexism is, one all systems that maintain relationships of dominance and subordination, institutionalized. It is implanted and perpetrated by institutions centrally located in the political socialization

process. It has an interest structure that provides the underlying rationale and dynamic for the on going process. Thus, to Amundsen "In a democracy, sooner or later one has to confirm with the basic principle of equality under the law".

High School, therefore, will implant and perpetrate the sexist dichotomy.

Jon E. Shapiro (1980) in a Status Report "The Feminized School" reported that sex differences on achievement have been shows to be related to societal expectations and influences. His research indicates that there may be a relationship between teacher sex and student performance.

The literature on sex differences in academic achievement and teachers' interactions with students has increased substantially in the past decade. An examination of this literature leads to two conclusions:-

1) there appear to be differences in academic performance, especially in the area of reading readiness and achievement, dependent upon the sex of the student.
2) there is a continuing controversy concerning the effects of the teacher's sex upon student performance.

This study of Shapiro sought to determine the status of male and female staffing patterns in elementary schools of the

United States. Data on staffing patterns was compiled from six region: NE, SE, NC, SC, NW, SW.

Through the analysis of variance he found that significant differences between the percentages of male teachers employed in the elementary schools by regions and by grade levels and significant interaction between region and grade level.

For the determination of the location of significant difference Shapiro used Scheffe's multiple-comparision procedure.

The results indicated that the NW origion had a significantly ($P < .01$) higher percentage of male elementary teachers than every other region. Additionally, the SW & NC regions had significantly higher percentages of males than NE, SE &SC regions. The regions was significantly superior to only the SE & SC regions.

Barbara Simmons (1980) in a study "Sex Role Expectations of Classroom Teachers" studied that teachers were subjects who reported variations in their sex-role expectations for male and female students and designated whether differences were innate or the result of cultural factors. A significant difference (beyond 0.05 level) was computed between student teachers and experienced teachers on the variable of intelligence as it relates to verbal skills. When differences were indicated, teahcers

expected boys to be more aggressive, independent and physically adept than girls; and girls were reported to be more emotional, ambitious, empathetic, intuitive, creative and intelligent (verbal ability than boys. For boys Barbara found cultural factors were more likely to be given as a reason for differences, whereas more responses indicating the influence of biological factors were attributed to girls.

The importance of expectations has been well documented. Weisstein (2:2) concludes, "what a person does and who he believes himself to be, will in general be a function of what people around him expect him to be .....".

The Rosenthal & Jacobson study (3), summarised in "Pygmalion in the Classroom", that the achievement of randomly selected children improved after their teachers were told that the students were bright underachievers and could be expected to make unusual academic gains.

Thus, with this study "Sex Role Expectations of Classroom Teachers" one can conclude that traditional assignments of sex roles, without considering an individual's particular strengths and weaknesses, denies both girls and boys the right to develop their full human potential. Feminists and other human rights groups have brought this situation under public scrutiny, and educational theorists are now taking a class look at the influence class room teachers' sex-role expectations may have on present and future student behaviour.

Lynne S. Koester (1980) conducted a study "Sex Similarities in Children's Activity, Attention and Arousal." In it he compared the observed classroom behaviour, tonic, phasic physiological arousal level and task performance of first grade male and female children.

Ninty eight (50 females and 48 males) first grade children, who were enrolled in six different first grade classrooms in central New Jersey and participated in Koester's study of sex similarities. The mean age was 6.35 years for the total sample. Testing and observations of the children were scheduled six months apart during normal academic year, and included the measures of:

1)Behaviour Rating Scale (Conners (1969).

2)Physiological: polygraph recordings.

3)CIRCUS II "Do you know"? test of G.K.

4)CIRCUS II "Look Alikes" a visual discrimination test.

5)Star Maze.

6)Pyramid.

While testing on the measures of classroom behaviour, task performances and physiological arousal level. Koester found that sex difference were to be minimal and were significant on only three out of the 18 variables investigated.

Results, through the Analysis of Variance indicated that males were rated by teachers and observers as having

significantly more classroom behaviour problems and as being more aggressive, males and females scored differently on only one performance measure, that of visual discrimination in which case females made significantly fewer errors. Measures of both tonic and phasic arousal levels failed to differentiate between the two sexes. Implications of research efforts which essentially reveal stronger similarities, than differences between male and female are discussed.

Students of sex differences, therefore, reported that male children are more active than their female counterparts (Maccoby & Jacklin, 1974). But the drawbacks of many of these studies rely almost exclusively upon teachers' ratings rather than on reliable, systematic observation.

A review of the related literature regarding single - sex and co-educational institutions and the effect of the environment on their respective population provides sound grounds to researchers and professionals for a thorough examination of the relative merits of co-educational and single-sex education, not only in India but also in most of the Western Countries.

There is, no doubt, that many of the arguments in support of co-education such as it provides a more normal or natural environment or that it prepares children for a more matured adult life are counterbalanced by the arguments that

co-education neglects the existence of sex difference, interests and aptitudes. Along with this it has also been found through empirical studies (Feather(1974) etc. that there are critical differences between the social psychological environment with two types of institution. The difference in the social psychological environment are supposed to have some influence upon students conceptualization, it is this influence that needs thorough analysis of their respective environment.

The purpose of the present study is therefore, to extend the comparison of the environmental perception of the students from co-educational and single-sex high schools with that of their value-climate.

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C H A PT E R -III

DESIGN OF THE STUDY

* Measures of Environmental Press
* Measures of Value-Climate
* Scoring
* Validity and Reliability
* Sample of the Study
* Statistical Technique & Procedure
* References.

The present study attempts to investigate the difference between the environment and the value climate of two types of educational institutions which differ in population in terms of sexes. Type one is the sex co-educational school in which children of both the sexes study jointly. Second type represent schools one is exclusively for boys and the other for girls.

Schools included in the present study are located within an area of one kilometer and have almost the same type of population representation. The students studying in all the three schools, to a certain extent have come from the same culture and economic background. They are taken as schools of almost equal education standard, with equal number of qualified male and female teachers. Other facilities for various types of student activities are also available in the three schools which produce incentive for the students to have full participation in co-curricular activities of the school.

These three schools were, therefore, taken as the suitable representative for the present investigation.

For the purpose of studying the school environment, a modified form of the High School Characteristic Index(HSCI) scales were used. The same scales were used by Mitchell (1968), Dale (1969,71), Stern (1970), Schneider Contts(1982).

These scales were used to measure the Environmental Press of school on the respondents behaviour.

In order to measure the value climate, the Coleman's Value-Climate scale was used.

The purpose of this study is to extend the comparision of the environmental perception of the students from co-educational and single-sex high school with the value climate of the respective institutions, a thorough analysis of the school environment and value-climate is needed.

The tools referred in this study have been discussed below:

MEASURES OF ENVIRONMENTAL PRESS:

The present investigation focuses mainly on the analysis of the environmental press of the institutions involved. The term press which has been used in this scale is not a new. The same was used by Murray (1938) and the expression given by him read as "one's behaviour is a function of the combination of needs and presses". In defining press, Pace & Stern (1958) said that as needs are inferred from the characteristic modes of response of an individual, similarly, press are reflected in the characteristic pressures, stresses, rewards and conformity demanding influences of the culture. Central to the notion of press is that the environment includes factors that may either facilitate or interfere with the gratification of needs. Accepting the argument presented by Stern &

Pace, the term press was retained with this questionnaire. After studying the items of HSCI scale, it was found that it is culturally biased and the language used were not common to our students. Therefore, this HSCI scale has been modified and standardized according to Indian situation with an understandable language for High School Students.

The original HSCI consists of thirty, 10 items scales in true-false format. Schneider & Coutts (1982) selected eight scales on the basis of Mitchell's (1968) factor analysis of the HSCI, which yielded four independent factors. Two scales from each of the four factors were selected by Schneider & Coutts (1982). Below are listed Mitchell's four factors and their corresponding two HSCI scales used by them (1982). Each scale is accompanied by a brief identifying phrase provided by Stern (1970 p.16) and a sample item.

1. Strong Intellectual Orientation: Achievement:"Striving for success through personal effort". Sample: "There is a lot of competition for grades." Humanities, Social Science: "Interests in the humanities and social sciences". Sample: "Many teachers and students are involved with literary, musical, artistic, or dramatic activities outside the classroom."

2. School Activities: Affiliation: "group-centered social orientation". Sample: "Itis easy to make friends in this school because of the many things that are going on that anyone

can participate in." Play-Work: "pleasure seeking versus purposefulness" Sample: "Everyone has a lot of fun at this school."

3. Strong Environmental Control: Impulsiveness Deliberation: "impulsiveness versus reflection." Sample: "Students who tends to say or do the first thing that occurs to the... are likely to have a hard time here." Deference Restiveness: "Respect for authority versus rebelliousness." Sample: "Teachers go out of their way to make sure that students address them with due respect."

4. Negative Attitude towards the Environment: Abasement-Assurance: "Self-depreciation versus self-confidence." Sample: "The teacher very often makes you feel like a child." Objectivity- Projectivity: "Objective detachment versus suspicion." Sample: "Everyone has the same opportunity to get good marks here because the tests are marked very fairly."

For the present investigation, on the basis of these above four factors thirty two questions (eight from each factors) has been standardized for the measure of Environmental Press.

Two important modification were also done. In the first place the serial order of the numbers were systematically changed. The process adopted of the change was that one question has been picked up from each set of questions and the new format

of thirty-two questions was developed. A key specifying all the four factors was also simultaneously developed. The second change was done in respect of responses. In the original questionnaire the respondents were asked to respond in true/false format whereas in the present questionnaire the respondents were asked to give other responses in three-point scale (Always, Often & Never). Each response was given definite weightage for the scoring purpose. The respondents while responsing, thereby indicating the extent to which they perceived their school environment.

MEASURES OF VALUE CLIMATE:

The Coleman's Value Climate Scale was used to measure the values of the students. The same scale was used by Coleman himself (1961), Jones et all (1972) end Schneider and Coutts (1982).

The Value-Climate scale is a six items ranking scale for its measure, the students were asked to rank the six items in order of their preference. Students then rank ordered (1 being most important) the following items: "being a teacher in school activities","having money," "getting high grades", "being an athletic star", "being good looking", and "having impressive personality".

Children of the age of 14 to 16 years of age and had at least eight to nine years of schooling are expected to develop certain values within the school system. These values

might be different from the values of educated adults.

In this study the investigation used the same scale for determining the values of the children of age group of 14 to 16 years because other scales of value-climate available for investigation were found less useful for this age group.

In order to find the applicability of this scale in Indian situation a try out was done and was found that the language used in this scale was easily understandable by high school students and the items used to determine the value-climate were also found to be least biased by external environmental factors.

This scale, therefore, can be easily be marked by the children of the age group under study. More important of it is that it is a standardized measure.

Thus, with these understanding this scale was employed in its original form in the present investigation.

SCORING:

1. Environmental Press: In the present investigation the scale determining the Environmental Press is a three-point scale (Always, Often & Never). The value assigned to each item was of the ratio of 2:1:0. High Scores on the scale indicate facilitative environment while low scores were the

index of restrictive school environment.

2. Value-Climate: The ranks given by each student in all the three schools were tallied. In order to find out the rank value and the weight of each item, tallies were multiplied by rank number and added. Item showed least weight in term of scores was ranked as 'one' and the item with the highest weight that is with the highest score was ranked as 'six', all the rest items (2,3,4,&5) were ranked in the same way.

VALIDITY AND RELIABILITY:

The validity of a test, or of any measuring instrument, depends upon the fidelity with which it measures what it purports to measure. In other words, a test is valid when the performances which it measures correspond to the same performances as otherwise independently measured or objectivity defined.

The test Environmental Press used in the investigation acquired content validation of its item through competent judgements from the experts of the Department of Education and the Department of Psychology of the Aligarh Muslim University. The language of few statements were modified and changed according to their instructions. A few statements were completely replaced and some were added. It was taken as valid when all the four experts of the two Departments examined it thoroughly.

The second most important variable in judging a test is reliability. A test score is called reliable when we have reason for believing the score to be stable and trustworthy. Stability and trustworthiness depend upon the degree to which the score is an index of "true-ability"-- is free of chance error. That is to say that how much of the score reflects a true measure of the individual and how much is due to error and extraneous factors.

There are three techniques of testing reliability of psychological and educational tests:-

1) Retesting subject with the same test.
2) Alternate form of the original test, i.e. correlation of original test scores with scores on another independent test (different form) having an item content similar to the original test.
3) "Split-half" or "Odd-even", correlation, which involves a division of the test into two parts, one part being odd-numbered questions and the other being the even-numbered questions. The correlation between scores on the odd-numbered and the even-numbered items yields a relability co-efficient for the entire test.

Since the other two methods were not possible, the 'split-half' method of reliability was employed in the present investigation. 100 forms were taken and every questionnaire was divided into even-odd items . In this way the investigation was able to get two sets of scores (X & Y) and the relationship of these two sets of scores was found.

The method employed for finding out relationship of two sets of scores is the Pearson's Product-Moment-Coefficient of Correlation (r).

An assumption underlying the Pearson's Product Moment Coefficient of Correlation is that the relationship between the two variables (X & Y) is a linear one. The formula used in the case of calculating the coefficient correlationship is:

$$r = \frac{\Sigma X Y}{\sqrt{\Sigma X^2 \Sigma Y^2}}$$

$\therefore$ r = .59 (calculated)

For calculating the reliability of the split-half, the self correlation of the whole test is estimated by the Spearman- Brown prophecy formula i.e.

$$r_{11} = \frac{2\,r}{1+\,r}$$

where r_{11} = total reliability of the test

r = coefficient of correlation(computed earlier)

The total reliability of the test Environmental Press is .72. By the varification, it was found that the test Environmental Press is reliable for the purpose of this investigation.

Further, factor-wise reliability was determine. For factor-wise reliability items of each factors were divided into two halves in the same split-half procedure and same formula was applied for the reliability of each factor. The factor-wise

reliabilities have been presented in the following table:

Factors	Reliability
A	.85
B	.55
C	.63
D	.58

SAMPLE OF THE STUDY:

The sample of the study consists of 150 students 14 to 16 years of age studying in class IX & X of the three different educational institutions, namely--

1) A.M.U. S.T. High School (Male): maintained by the University.
2) A.M.U. Girls High School (Female): maintained by the University.
3) Our Lady of Fatima Hr. Secondary School(co-education): maintained by the Christian Missionaries.

The representative sample included in the present study has been shown in the following table:-

Name of the Institution	Class		Total
	IX	X	
S.T.High School	25	25	50
City High School	25	25	50
Our Lady of Fatima	25	25	50
Grand Total			150

STATISTICAL TECHNIQUE AND PROCEDURE:

The two tests i.e. Environmental Press and Value Climate were administered on all the 150 students of three schools . These two tests were administered to ascertain the school environment and to which extent the environment of the school effect the values of the students.

The review of research presented in Chapter II reveals that a variety of statistical technique have been employed for investigating the difference between the 'co-educational and single sex institutions. The techniques included factor analysis (Dale -1969, Lunn -1969,70,72, Feather-74), Coefficient of Correlation (Dale 1970, Barker 72), Analysis of Variance (Koester 1980) Shapiro -1980, Dale -1970, Coutts-1982), 't' value (Dale-1969, Miller-1971, Feather-1974,Ormerod), Matched pair procedure (Lunn 1972, Miller-1972) Chi-square (Lunn 1972), grid method (Ormerod-1975, Duckworth & Entwistle-1974), Semantic differential (Haslett 1976), Scheffe's multiple-comparision procedure (Shapiro 1980).

In the present investigation the statistical technique used are :

1) Analysis of Variance (ANOVA)- F- Ratio.
2) t-test
3) Pearson's Product moment Coefficient of Correlation.
4) Spearman's Rank Order Correlation of Coefficient.

By using these techniques the investigatoy is of the opinion that she will be able to accept or reject the hypothesis more comfortably in a more scientific way and will be able to justify the findings in specific terms.

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C H A P T E R -IV

COLLECTION, PRESENTATION AND ANALYSIS OF DATA

* Environmental Press Data
* Value-Climate Data
* Results
* References.

The present study attempts to investigate the comparision between the co-educational and single sex schools' Environmental Press and the Value-Climate that exist in the schools under study.The collection of data, and its analysis has been presented in the following paragraphs.

COLLECTION OF DATA:

The sample of the present study consists of 150 students of class IX & X of 14 to 16 years of age from the three schools as referred in chapter-III.

The investigator herself visited the schools and with the permission of the principal, administered the questionnaire among the students of the respective classes. In the classroom , the investigator distributed both the questionnaires together to all the 50 students. She requested the students to read the instructions carefully before giving their responses.

The questionnaire regarding the environmental press was to be attempted first and then the items of the Value-Climate had to be ranked in order of preference. To make sure that the students understand well the instructions, the investigator herself read out the instructions and made every point clear to the students, so that they might be able to complete the questionnaires independently with clear understanding. No time limit was fixed in responding both the questionnaires. Within

30 to 40 minutes the investigator was able to collect back the two forms from the students. The copies of two questionnaires are presented in Appendix 1 & 2.

ANALYSIS OF DATA:

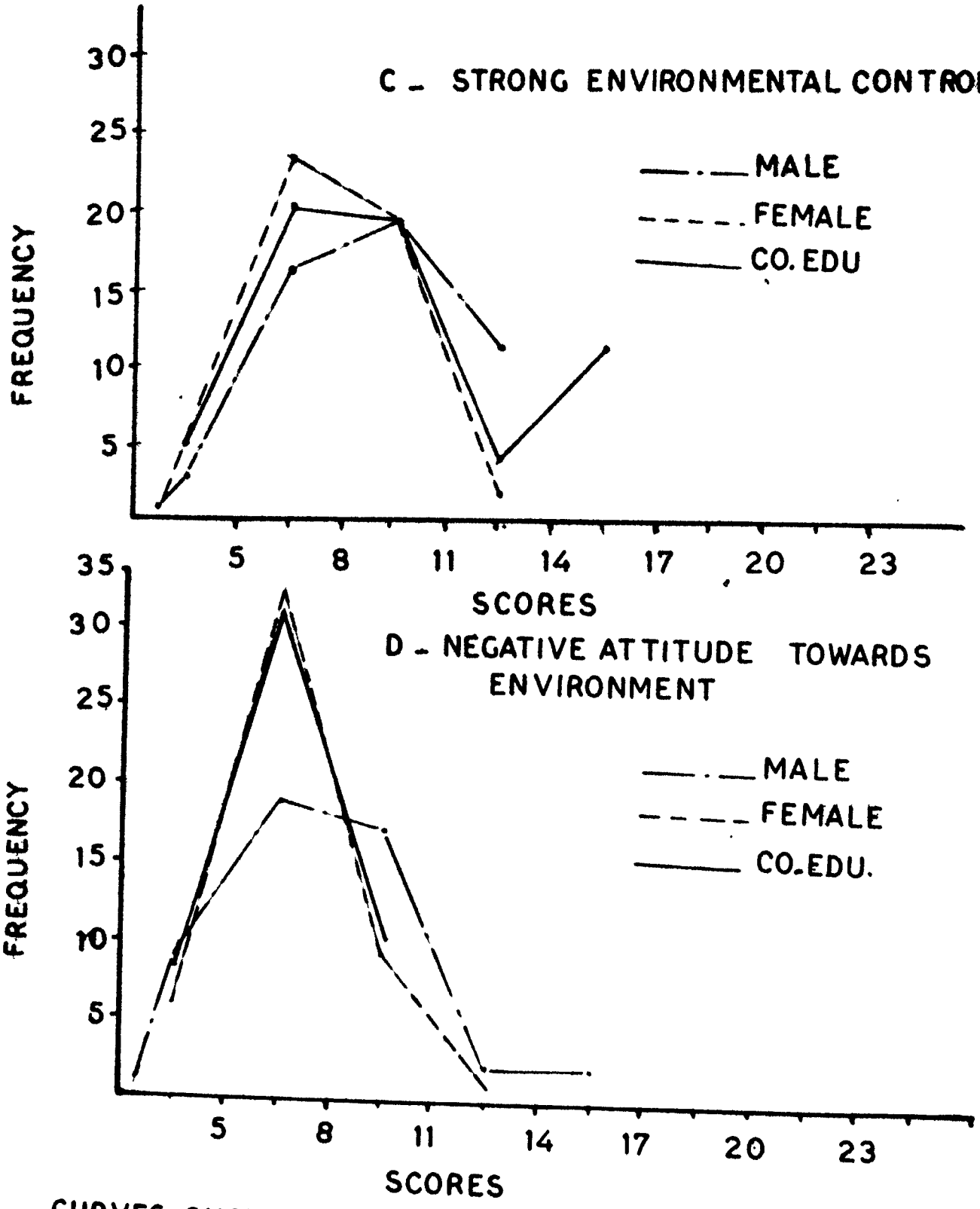
The data, thus collected were arranged for scoring. The records of the scores of all the three schools(Male, Female & Co-education) were maintained separately.

Environmental Press Data: The scores of each item of the questionnaire of Environmental Press were calculated in the ratio of 2:1:0 (Always, Often, Never respectively).

First of all, the total score of each individual was recorded and the scores of the items of each four factors of the environmental press were also counted separately and recorded (Appendix 3). The scores obtained by the male and female of the co-educational institution were further recorded separately (Appendix 4) for comparing the difference between the two sexes of the same environment in different areas.

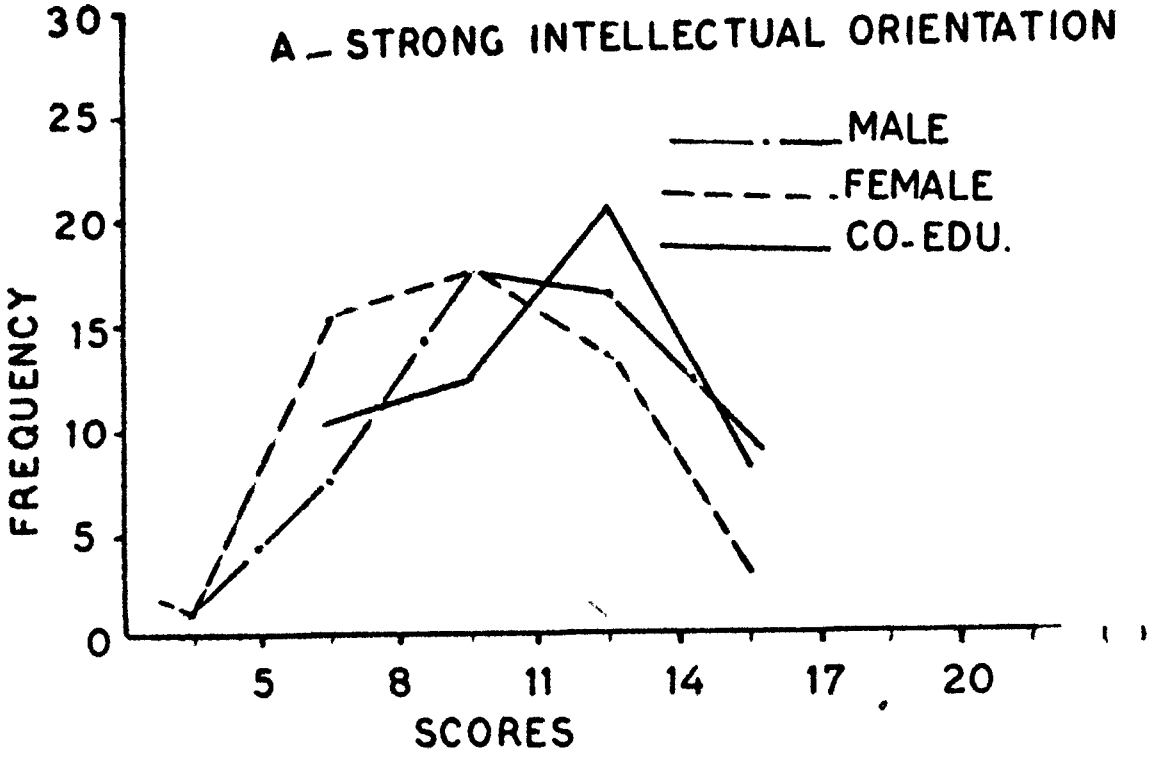
All the scores, therefore, collected were kept for further analysis and statistical treatment to find the cumulative difference between the environmental press of the three schools as perceived by the students.

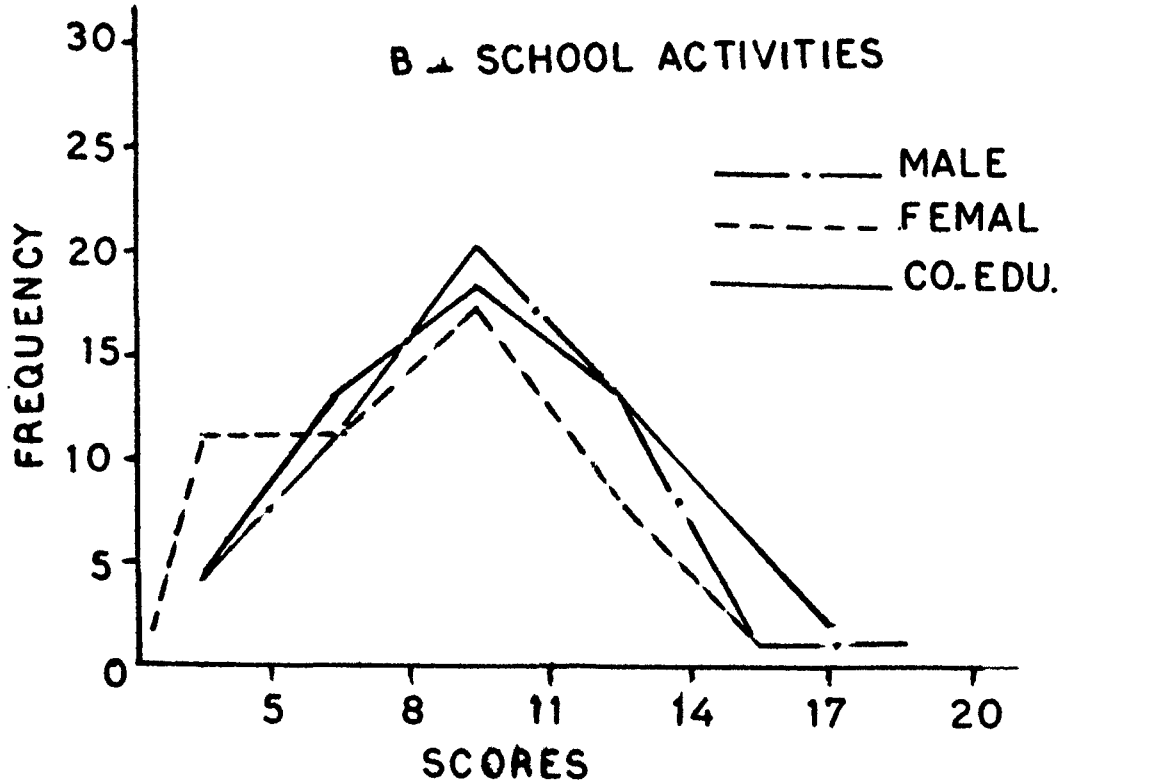
The hypothesis designed in this study in the first place is that there is a difference in the perception of the



CURVES SHOWING VARIATIONS IN THE FREQUENCIES OF THE SCORES OF ENVIRONMENTAL PRESS

(FIG. - 2)





CURVES SHOWING VARIATIONS IN THE FREQUENCIES OF THE SCORES OF ENVIRONMENTAL PRESS

(FIG.- 1)

students in respect of the environment of their schools. In order to see the difference between the three schools, the means of the scores of the four factors of the Environmental Press were calculated. Following table represents the means of the three schools: (Fig. 1 & 2).

Mean Environmental Press Scores (collapsed across the grade)

FACTORS	Co-Educational Schools		Single Sex Schools	
	Males	Females	Males	Females
Strong Intellectual Orientation	10.72	12.72	11.36	9.94
School Activities	7.88	11.2	9.96	8.44
Strong Environmental Control	8.88	8.12	9.16	8.18
Negative Attitude Toward the Environment.	5.84	6.64	7.78	6.86

High scores signifies the characteristics on the left.

The difference can be ditermine by calculating the difference between the means of the three variables (Male, Female & Co-Education). Comparatively, more suitable measure of determining the significance of two or more variables is the analysis of variance (ANOVA). This is a systematic approach which provides more efficient and exact tests of experimental hypothesis than do the conventional methods ordinarily employed.

The general rationale of ANOVA is that the total variance of all subjects in an experiment can be analysed into two sources, variance between groups and variance within groups.

To make sure that the differences among the means of various groups are great enough to be statistically significant or is it likely that they occured by chance, the investigator computed the F-Ratio.

Computation of F-Ratio: For the present study in order to test the significance difference between the means the investigator computed F-Ratio by the following formula which has been step-wise explained below:

Step 1: Compute SS_{tot} (Sum of the squares of the total scores)

Assume $N_{tot} = N_1 + N_2 + N_3$ (Total Number of the 3 variables)

$$SS_{tot} = \Sigma X^2_{tot} - \frac{(\Sigma X_{tot})^2}{N_{tot}}$$

X^2_{tot} = Sum of the squared scores of the three variable.

X_{tot} = Sum of the scores of the 3 variables.

Step 2: Compute SS_{bg} (Sum of the squares between the group).

$$SS_{bg} = \sum_{j}^{K} \left[\frac{(\Sigma X_j)^2}{N_j} \right] - \frac{(\Sigma X_{tot})^2}{N_{tot}}$$

$\Sigma X_j / N_j$ = the sum of the scores in each group divided by the Number of that Group.

Step 3: Compute SS_{wg} (Sum of squares within groups).

$$SS_{wg} = SS_{tot} - SS_{bg}$$

Step 4: Compute the degrees of freedom (df)

$df_{bg} = K-1$ (K = Number of Variables)

$df_{wg} = N_{tot} - K$

Step 5: Compute MS_{bg} (Mean Square between Group)

$$MS_{bg} = \frac{SS_{bg}}{df_{bg}}$$

Step 6: Compute MS_{wg} (Mean square within groups)

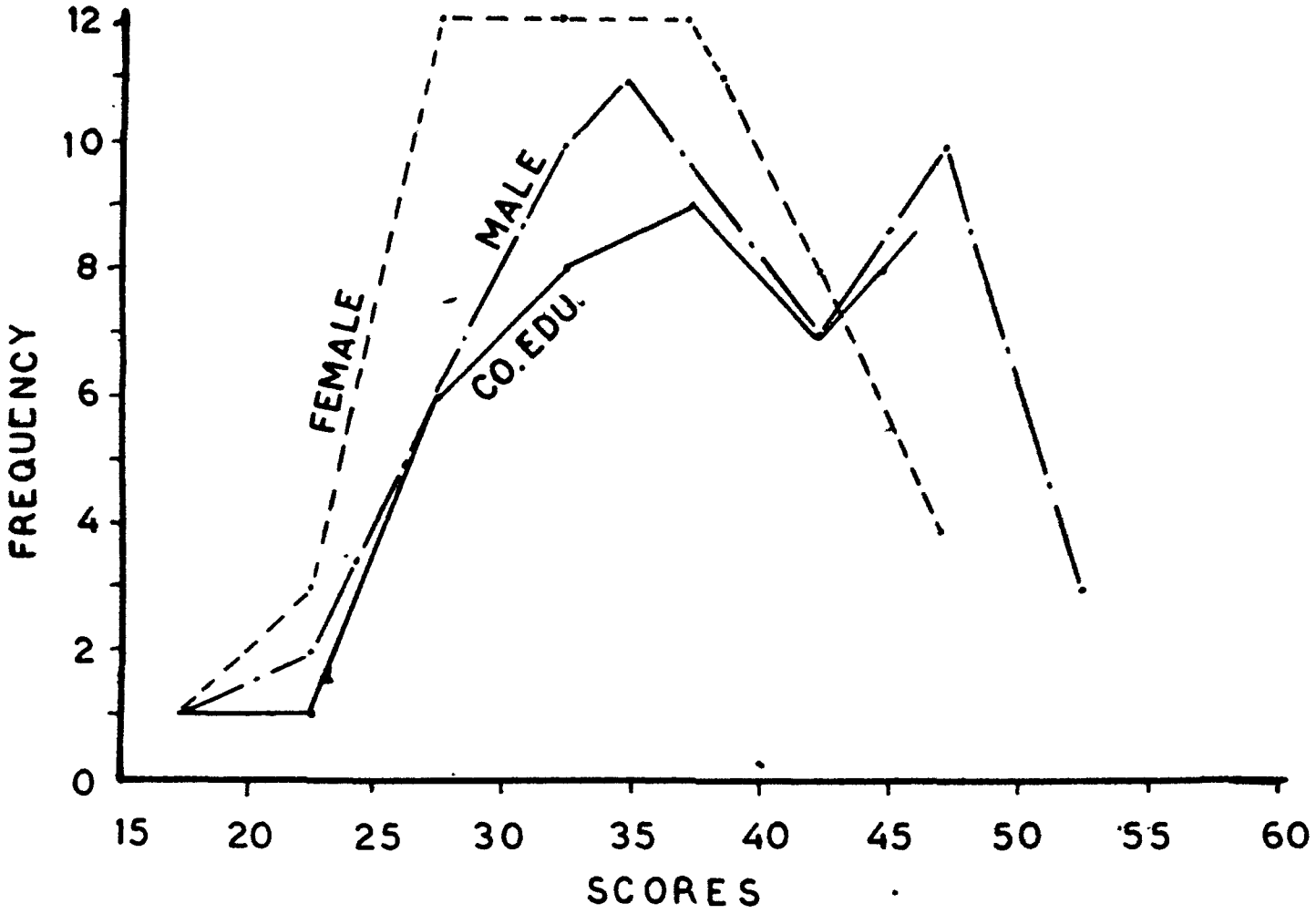
$$MS_{wg} = \frac{SS_{wg}}{df_{wg}}$$

Step 7: Compute the F-ratio

$$F = \frac{MS_{bg}}{MS_{wg}}$$

Summary of the Analysis of Variance of more than two groups (F- Ratio)

Source of Variation	SS	df	MS	F	Level of significance
Between Groups	-	-	-	-	-
Within Group	-	-	-		



CURVES SHOWING VARIATION IN THE ENVIRONMENT OF THE THREE SCHOOLS

(FIG. -3)

Summary of the calculated F-ratio of the total scores of the three schools has been shown in the following Table which shows significant difference in the environment of the three schools.(Fig.-3).

Source of Variation	SS	df	MS	F	Level of significance
Between Groups	632.9	2	316.45	6.56	Significant at .05 & .01
Within Groups	7314.98	147	49.76		

The F- table therefore, confirmed that F-ratio of 6.56 is significant at both .05 and .01 level.

Being encouraged by this finding the investigator further calculated the F-ratios between each of the four factors of the Environmental Press to find the difference in respect of sex, type and grade of the three schools.

The four Environmental factors are:-

A- Strong Intellectual Orientation

B- School Activities

C- Strong Environmental Control

D- Negative Attitude Toward the Environment.

Summaries of the calculated F- ratios between each of the four factors of the three schools are given in the following tables:-

A- Strong Intellectual Orientation

Source of Variation	SS	df	MS	F	Level of signiiicance
Between Groups	88.78	2	42.89	5.10	Significant at .05 & .01 level
Within Groups	1235.22	147	8.40		

B- School Activities

Source of Variation	SS	df	MS	F	Level of significance
Between Groups	71.42	2	35.71	4.03	Significant at .05 & .01 level
Within Groups	1302.96	147	8.86		

C- Strong Environment Control

Source of Variation	SS	df	MS	F	Level of significance
Between Groups	26.44	2	13.22	2.15	Significant at .05 & .01 level
Within Groups	902.1	147	6.13		

D- Negative Attitude toward the Environment

Source of variation	SS	df	MS	F	Level of Significance
Between Groups	22.78	2	11.39	2.85	Insignificant at .05 & .01 level
Within Groups	587.1	147	3.99		

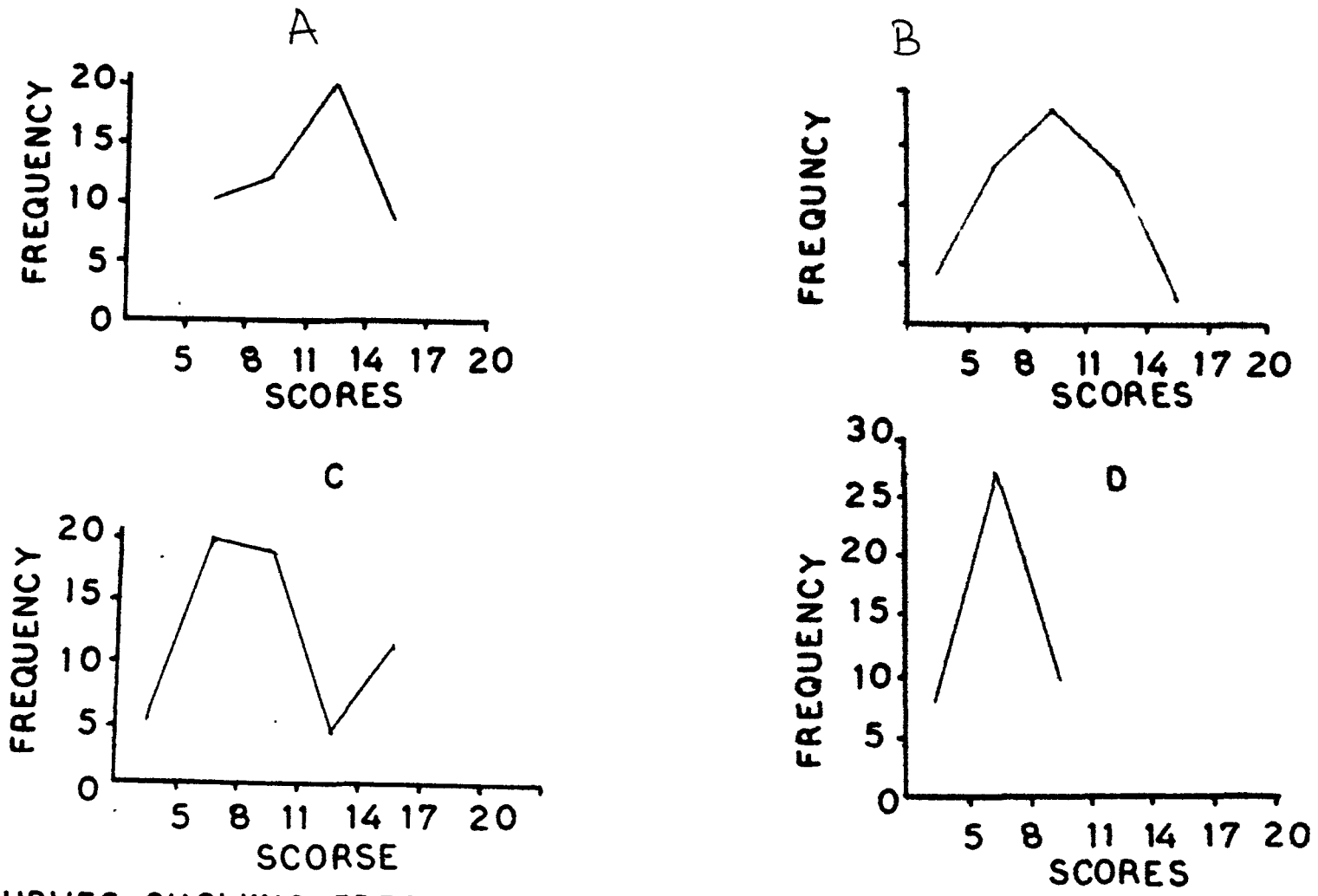
The analysis of variance by the use of F-ratio provides an incentive to the investigator for further analysis and determining the areas of high and low significanee between the groups under study.

Another important concern of the investigator is to find out the difference between each of four factors of the Environmental Press as regards to the sex, school type and grade. These difference, for the level of significance can be calculated and tested by the use of "t-test".

The t-test formula used in the present study is as follows:-

$$t = \frac{\overline{X}_1 - \overline{X}_2}{\sqrt{\left(\frac{SD_1}{N_1}\right)^2 + \left(\frac{SD_2}{N_2}\right)^2}}$$

CO-EDUCATION



CURVES SHOWING FREQUENCY DISTRIBUTION OF DIFFERENT ITEMS OF ENVIRONMENTAL PRESS.

A - STRONG INTELLECTUAL ORIENTATION (ACHIEVEMENT)

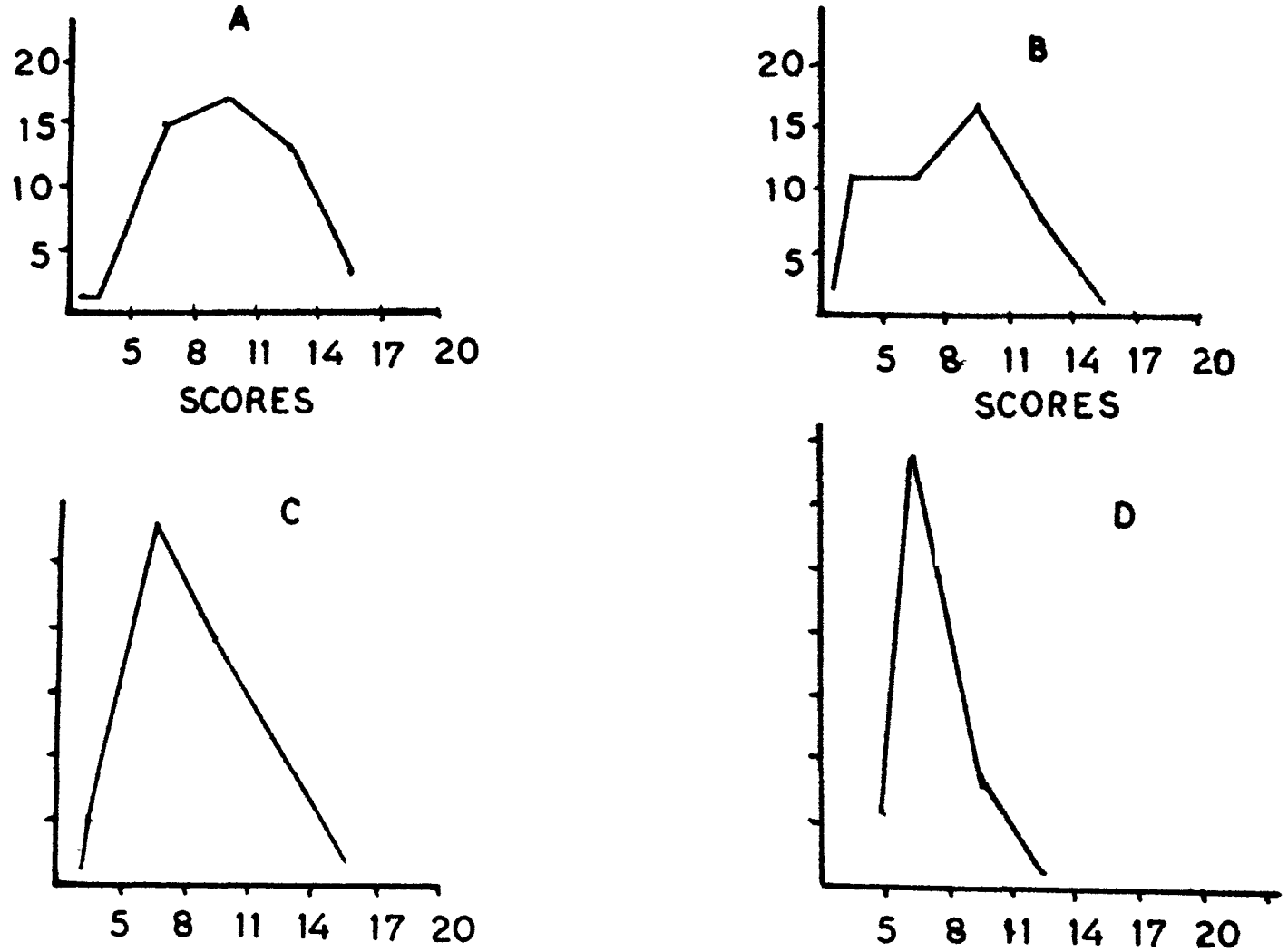
B - SCHOOL ACTIVTIES

C - STRONG ENVIRONMENTAL CONTROL

D - NEGATIVE ATTITUDE TOWARDS ENVIRONMENT

(FIG. 6)

SINGLE SEX (FEMALE)



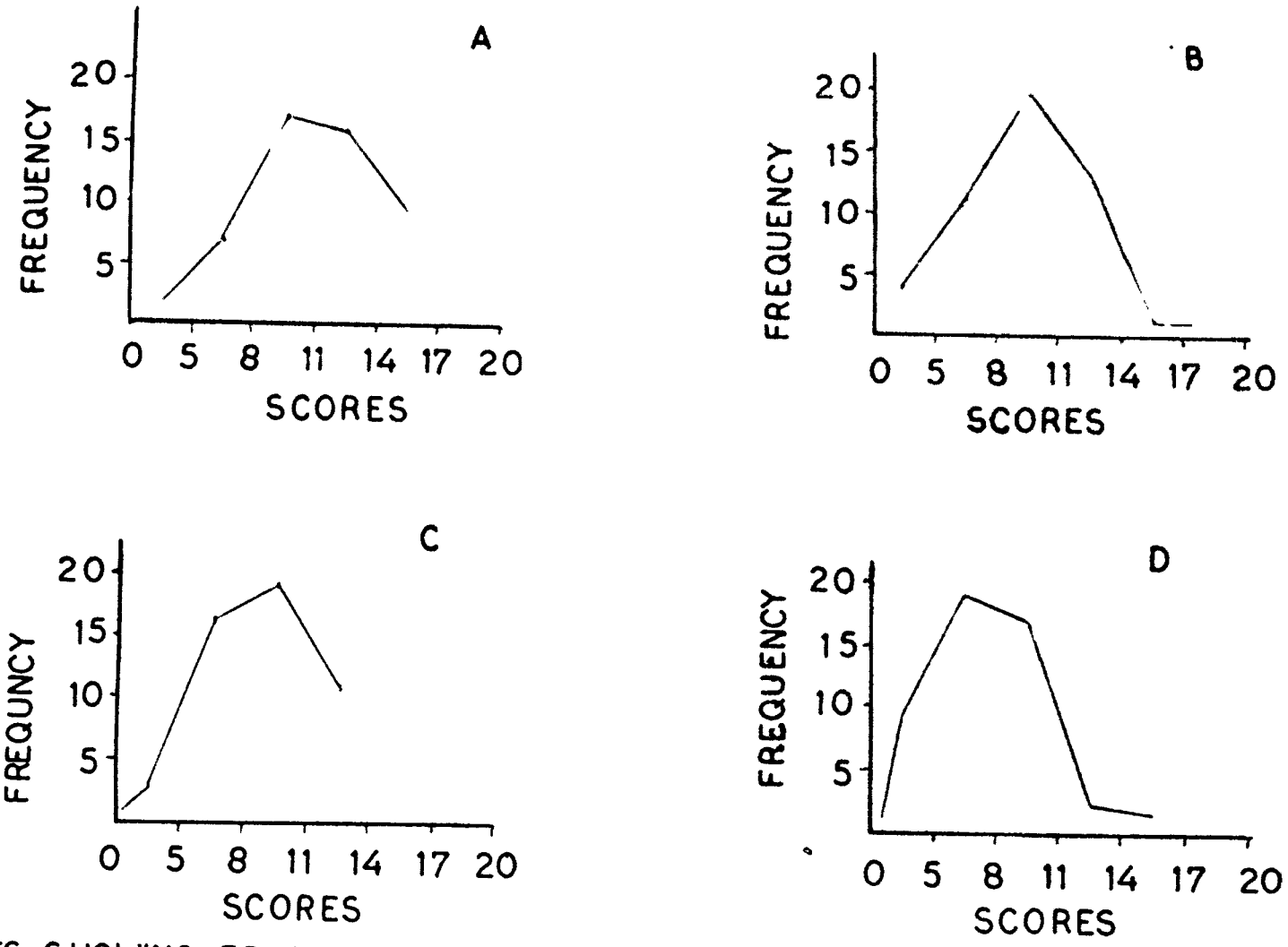
CURVES SHOWING FREQUENCY DISTRIBUTION OF DIFFERENT ITEMS OF ENVIRONMENTAL PRESS

A – STRONG INTELLECTUAL ORIENTATION ACHIEVEMENT
B – SCHOOL ACTIVITIES
C – STRONG ENVIRONMENTAL CONTROL
D – NEGATIVE ATTITUDE TOWARDS ENVIRONMENTS

(FIG. 5)

(FIG. 5)

SINGLE SEX MALE



CURVES SHOWING FREQUENCY DISTRIBUTION OF DIFFERENT ITEMS OF ENVIRONMENTAL PRESS

A - STRONG INTELLECTUAL ORIENTATION (ACHIEVEMENT)
B - SCHOOL ACTIVITIES
C - STRONG ENVIRONMENTAL CONTROL
D - NEGATIVE ATTITUDE TOWARDS ENVIRONMENT

(FIG. 4)

(FIG. 4)

where:

t = Standard score for distribution of difference

$\bar{X}_1$ = mean of the sample (1st group)

$\bar{X}_2$ = mean of the sample (2nd group)

SD_1 = Standard deviation of sample (1st group)

SD_2 = Standard deviation of sample (2nd group)

N_1 & N_2 = Number of cases.

The above formula states two basic assumptions for the independent samples, they are:-

i) The population distribution of the dependent variable is normal;

ii) The variance of the population are equal, slight departures of course will be of little consequence.

Before applying the t-test the investigator has to be sure that the data fulfill the above two conditions. For this purpose frequency distribution of the scores of all the variable is essential. Frequency distribution of the available scores were therefore, drawn and plotted in the graphs.

The graphs (Fig,4,5 & 6) show that the available data fulfills the assumptions and investigator could safely apply the t-test for further findings.

The investigator therefore, calculated t-ratio between

the total scores of the following groups.

Single -Sex Male Vs Single-Sex Female

Institution	N	$\bar{X}$	SD	t	Level of Significance
Male	50	37.08	6.10	2.97	Significant at .05 & .01 Level.
Female	50	33.42	6.38		

Single-Sex Female Vs Co-education

Institution	N	$\bar{X}$	SD	t	Level of Significance
Female	50	33.42	6.38	3.27	Significant at .05 & .01 level
Co-education.	50	38.24	8.25		

Co-education Vs Single -Sex Male

Institution	N	$\bar{X}$	SD	t	Level of Significance
Co-education	50	38.24	8.25	0.8	Insignificant at .05 & .01 level
Male	50	37.08	6.10		

The results of the above analysis show that the e is a significant difierence between the environment of the male and female schools, (t=2.97), similarly a significant

difference was found between female and co-educational institution (t = 3.27)but the environment of co-educational and male school was not found significant (t=0.8). These findings further lead the investigator to find out the difference between sex, school and grade in respect of various factors of the Environmental Press. The investigator therefore calculated t-ratios between the four factors (A, B,C & D) of various groups. The symbols used for the following groups are:-

SS -M = Single -Sex Male

SS- F = Single -Sex Female

Co-Edu. = Co-Education

Co-Edu-M = Co-Education/Male of

Co-Edu-F = Female of Co-education.

Following are tables showing calculated t-values.

FACTOR -A

Single-Sex Male Vs Single-Sex Female

Institution	N	$\bar{X}$	SD	t	Level of Signi - ficance.
SS-M	50	11.68	2.76	3.07	Significant at .05 & .01 level
SS-F	50	9.94	3.09		

Single-Sex Female Vs Co-Education

Institution	N	$\bar{X}$	SD	t	Level of Significance
SS-F	50	9.44	3.07	2.53	Significant at .05 & Insignificant at .01
Co-Edu.	50	11.36	2.75		

Co-Education Vs Single -Sex Male

Institutution	N	$\bar{X}$	SD	t	Level of Significance
Co-Edu.	50	11.68	2.76	.60	Insignificant at .05 & .01 level
SS-M	50	11.36	2.74		

FACTOR -B

Single-Sex Male Vs Single-Sex Female

Institution	N	$\bar{X}$	SD	t	Level of Significance
SS-M	50	9.84	2.78	2.45	Significant at .05 & Insignificant at .01
SS-F	50	8.44	3.11		

Single-Sex Female Vs Co-education

Institution	N	$\bar{X}$	SD	t	Level of Significance
SS-F	50	8.44	3.11	2.62	Significant at .05 & .01 level.
Co-Edu.	50	9.96	2.93		

Co-Education Vs Single-Sex Male

Institution	N	$\bar{X}$	SD	t	Level of Significance
Co-Edu.	50	9.96	2.93	.21	Insignificant at .05 & .01 level.
SS-M	50	9.84	2.78		

FACTOR -C

Single-Sex Male Vs Single-Sex Female

Institution	N	$\bar{X}$	SD	t	Level of Significance
SSM	50	8.4	2.47	.48	Insignificant at .05 & .01 level
SS-F	50	8.18	2.28		

Single-Sex Female Vs Co-Education

Institution	N	$\bar{X}$	SD	t	Level of Significance
SS-F	50	8.18	2.28	2.04	Significant at .05 & Insignificant at .01 level
Co-Edu.	50	9.16	2.58		

FACTOR -D

Single-Sex Male Vs Single-Sex Female

Institution	N	$\bar{X}$	SD	t	Level of Significance
SS-M	50	7.1	1.80	5.36	Significant at .05 & .01 level.
SS-F	50	6.86	1.74		

Single-Sex Female Vs Co-Education

Institution	N	$\bar{X}$	SD	t	Level of Significance
SS-F	50	6.84	1.74	2.3	Significant at .05 & Insignificant at.01 level
Co-Edu.	50	7.78	2.33		

Single-Sex Male Vs Co-Education

Institution	N	$\bar{X}$	SD	t	Level of Significant
SS-M	50	7.1	1.80	4.25	Significant at .05 & .01 level
Co-Edu.	50	7.78	2.33		

Single-Sex Male Vs Co-Education Male

FACTOR-A

Institution	N	$\bar{X}$	SD	t	Level of Significant
SS-M	50	11.36	2.74	-1.33	Insignificant at .05 & .01 level
Co-Edu. Male	25	10.72	1.65		

FACTOR -B

Institution	N	$\bar{X}$	SD	t	Level of Significant.
Co-Edu. Male	25	7.88	3.57	3.15	Significance at .05 & .01 level
SS-M	50	9.96	2.93		

FACTOR -C

Institution	N	$\bar{X}$	SD	t	Level of significance
Co-Edu.-M	25	8.88	3.83	.33	Insignificant at .05 & .01 level.
SS-M	50	9.16	2.58		

FACTOR-D

Institution	N	$\bar{X}$	SD	t	Level of Significance
Co-Edu.-M	25	7.44	3.16	.26	Insignificant at .05 & .01 level
SS-M	50	7.78	2.33		

Co-Education Female Vs. Single-Sex Female

FACTOR -A

Institution	N	$\bar{X}$	SD	t	Level of Significance
Co.-Edu.-F	25	12.72	2.53	4.27	Significant at .05 & .01 level.
SS-F	50	9.94	3.09		

FACTOR -B

Institution	N	$\bar{X}$	SD	t	Level of Significance
Co-Edu.-F	25	11.2	2.34	4.45	Significant at .05 & .01 level
SS-F	50	8.44	3.11		

FACTOR-C

Institution	N	$\bar{X}$	SD	t	Level of significance
Co-Edu.-F	25	8.12	3.05	.08	Insignificant at .05 & .01 level
SS-F	50	8.18	2.26		

FACTOR-D

Institution	N	$\bar{X}$	SD	t	Level of Significance
Co-Edu.-F	25	6.64	3.10	.06	Insignificant at .05 & .01 level.
SS-F	50	6.86	1.74		

In order to find out the significance difference between the means of the high & low scores of the three schools, the investigator further calculated t-ratios between the two as stated below:-

High Scores Vs Low Score

Single-Sex Male School

Score	N	$\bar{X}$	SD	t	Level of Significance
High Score	41	40.85	6.43	8.29	Significant at .05 & .01 level
Low Score	9	26.33	4.35		

Single-Sex Female School

Score	N	$\bar{X}$	SD	t	Level of Significance
High Score	32	37.25	3.92	9.67	Significant at .05 & .01 level
Low Score	18	26.61	3.69		

CO-Educational School

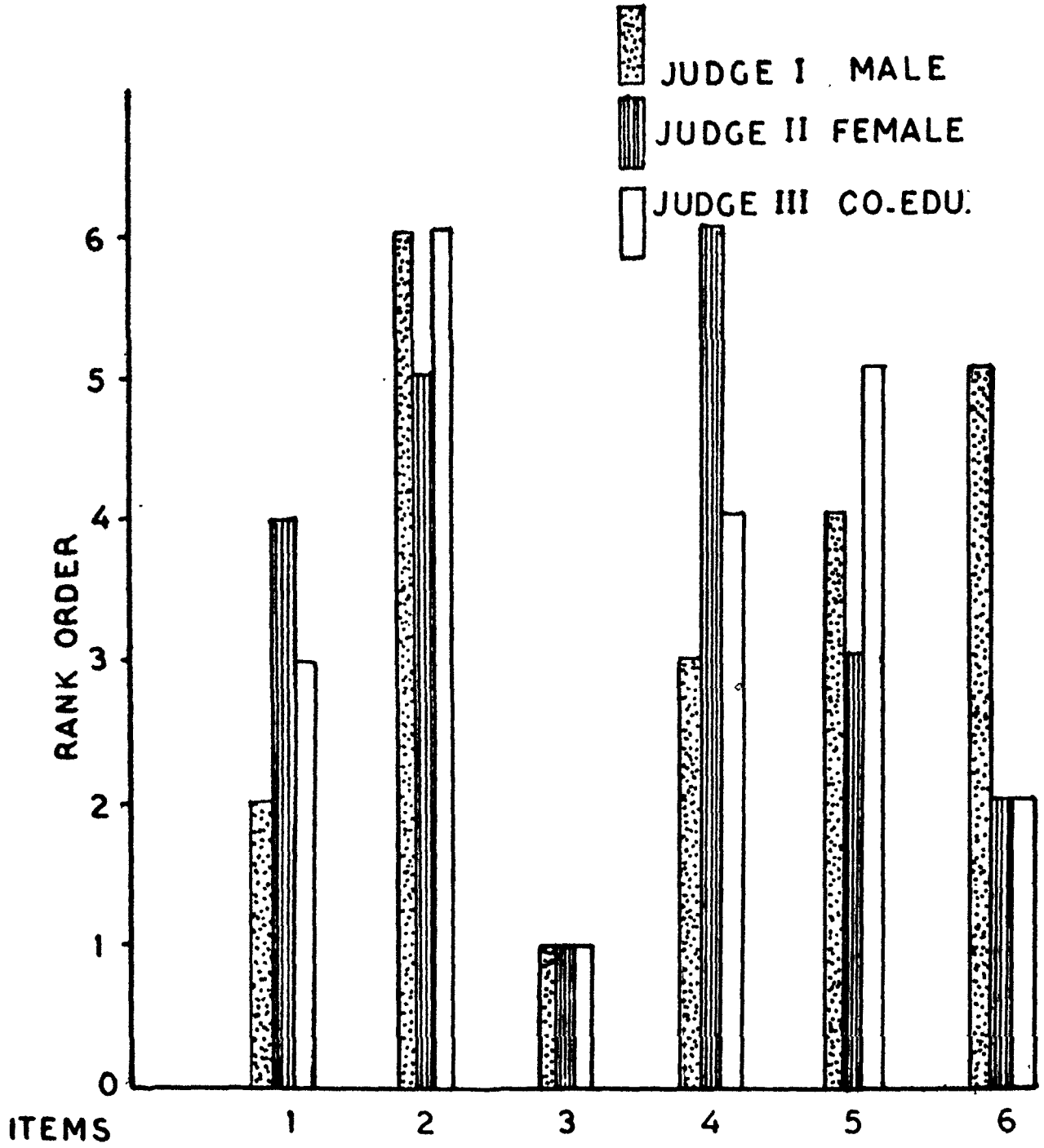
Score	N	$\bar{X}$	SD	t	Level of Significance
High Score	41	39.19	4.31	9.09	Significant at .05 & .01 level
Low Score	9	27.44	3.37		

The above analysis of the Environmental Press data and the derived results may help the investigator to accept or reject the hypothesis more scientifically.

In the present study the second tool the "Value-Climate" (referred in Chapter-III) was used to find out the Value -Climate of the three educational institutions (schools under-study) as perceived by each student.

Value-Climate Data:

As has been explained in Chapter III, the students ranked the six items of the questionnaire in order of their independent preference. In order to find out the weight of every item tallies of the ranked scores were computed and multiplied by rank numbers and then added. These added scores represent the general ranks given by the three different educational institutions. The item with least score in the ranking scale was ranked as No.1 and item with highest score



HISTOGRAM OF THE VALUE-CLIMATE RANKED BY THREE JUDGES OF THREE DIFFERENT SCHOOLS

(FIG.7)

was ranked as No.6. Similarly the rest of the items were also ranked in their respective position.

The rank order of the six items of the value-climate as ranked by three main judges (male, female & co-education respectively) could be read out in the table follows. The same has been presented in the Histogram (Fig.-7).

Items	Judge I	Judge II	Judge III
1.	2	4	3
2.	6	5	6
3.	1	1	1
4.	3	6	4
5.	4	3	5
6.	5	2	2

In order to find out the significance relationship between the rank difference of the judges, Spearman's (rho) rank difference correlation coefficient has been suggested and so it was applied by the investigator in the present study.

The formula used for computing rho (P) is as below:-

$$P = 1 - \frac{6 \Sigma D^2}{N(N^2-1)}$$

Symbol :

P= Coefficient of correlation from rank difference (rho).

ΣD^2 = Sum of the squares of difference in ranks.

N = Number of pairs.

An assumption underlying this correlation is that the differences among individuals or group of individuals in many traits can often be expressed by ranking the subjects in 1-2-3 order when such differences cannot be measured directly.

The rank order correlation of co-efficient (P) was calculated between the following judges:-

1- Judge I & Judge II

Items	Judge I	Judge II	D	D^2
1.	2	4	-2	4
2.	6.	5	1	1
3.	1	1	0	0
4.	3	6	-3	9
5.	4	3	1	1
6.	5	8	3	9
				$\Sigma D^2 = 24$

$$r = 1 - \frac{6 \Sigma d^2}{N - (N^2 - 1)}$$

$$= 1 - \frac{6 \times 24}{-(36-1)}$$

$$= 1 - \frac{6 \times 24}{6 \times 35}$$

$$= 1 - \frac{144}{210}$$

$$= 1 - .68 = .32$$

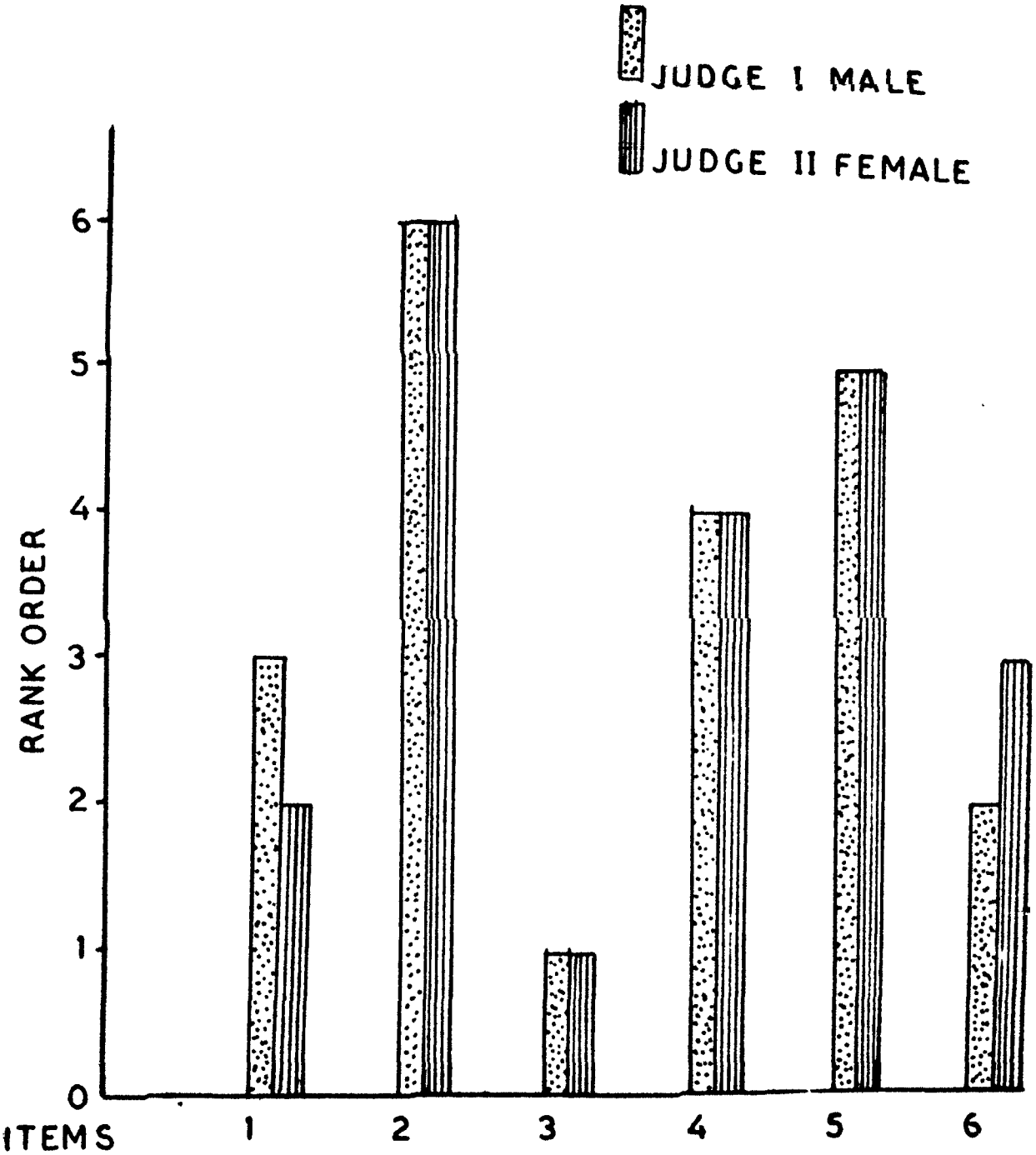
From P-table the investigator stated that p = .32 is likely to be significant at .05 level but insignificant .01 level.

2. Judge II & Judge III:

Through the process of above calculation we have $\Sigma D^2 = 12$, N = 6 and P =.72 which is highly significant at .05 as well as .01 level.

3. Judge III & Judge I:

Through the calculation the investigator got $\Sigma D^2 = 12$, N = 6 & P =.66. This is also found significant at both .05 & .01 level.



HISTOGRAM OF VALUE CLIMATE RANKED BY TWO JUDGES OF CO EDUCATIONAL SCHOOL

(FIG. 8)

For further analysis, the investigator analysed the ranking of co-educational school into male and female separately. This may helps the investigator to state out the difference between the value of the similar sexes in two different schools.

The rank-order table of male and female of the co-educational school is:

Items	Co-educational school	
	Judge IV Male	Judge V Female
1.	3	2
2.	6	6
3.	4	4
4	4	4
5.	5	5
6.	2	2

The same table is also respresented in the Histogram (Fig.-6). It shows that there is not much difference in the values of the two sexes as perceived in the same environment.

The coefficient of correlation (P) of the above two judges of the same school has been found as below:

$\Sigma D^2 = 2$, $N = 6$, $P = .95$. This states much higher significance at both .05 & .01 level.

In order to get the difference between the Value-Climate of three schools as stated in the hypothesis, the investigator further calculated the means of all the ranking scores of the Value-Climate items. The mean-rankings of the value climate items is presented in the table follows:-

Mean Rankings of Value-Climate Item

Items	Co-Edu. School		Single-Sex School		Mean of the Means
	Male	Female	Male	Female	
1. Leader in activities	3.44	3.16	3.38	3.84	3.45
2. Money	4.64	5.2	4.08	4.54	4.61
3. High Grades	1.61	1.48	2.66	1.54	1.82
4. Athletic Star.	3.68	3.4	3.48	4.54	3.77
5. Good Looking	4.22	4.52	3.7	3.82	4.06
6. Impressive Personality	2.88	3.24	3.72	2.7	3.13

Note: Low number signifies item was seen as contributing highly to achieving importance among same-sex peers at school.

From the given means in the above table, the mean of the means of each six items were further calculated to find out the cumulative effect of the value climate on the rank order of the total population consist of three schools under study. This shows that inspite of the variation in ranking among judges, the population as a whole has ranked these items in a different order as shown in the table.

In view of the hypothesis, the ranks need further analysis. The investigator, therefore, separate the rank-orders of the low-scorers of the Environmental Press of the three schools. This was done to find out the extent to which the different factors of the environment effect the values of the individuals.

For the purpose of comparing rankings, the investigator has analysed the following 8 Judges:-

Judge I	-	Single-Sex Male.
Judge II	-	Single-Sex Female.
Judge III	-	Co-Education.
Judge IV	-	Co-Education-Male.
Judge V	-	Co-Education-Female.
Judge VI	-	Low Score-Male.
Judge VII	-	Low Score-Female.
Judge VIII	-	Low Score-Co-Education.

For interpreting differences, the ranking as done by these judges have been presented in the following table:-

Items	Judges							
	I	II	III	IV	V	VI	VII	VIII
1.	2	4	3	3	2	1	3	4
2.	6	5	6	6	6	2	6	3
3.	1	1	1	1	1	6	1	1
4.	3	6	4	4	4	3	5	5
5.	4	3	5	5	5	4	4	6
6.	5	2	2	2	3	5	2	2

Thus, the analysis of the above data, the statistical treatments and the results have been interpreted and the inferences have been explained in Chapter V.

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C H A P T E R -V

* *INTERPRETATION*
* CONCLUSION
* SUGGESTIONS
* SUMMARY

INTERPRETATION:

After analysing the data it is the responsibility of the investigator to interpret the findings of the analysis and to test the hypotheses which have been the basis of the investigation. In this chapter therefore, the focus of attention is in the first place, on testing the hypotheses and then the interpretation of the results. In this effort the investigator has also taken full pain in comparing her findings with previous studies done in this area, and thus she is in a position to highlight the similarities and the differences wherever it was found in the results.

Admittedly, the purpose of investigation will not be completed unless the conclusions are stated in specific terms and areas of further investigations are indicated. With these facts in mind, this chapter has deliverately been assigned to interpretations, conclusions and suggestions for further researches.

The first hypothesis reads as 'the student of co-educational institutions perceived the environment of their school as different from their counterparts single-sex boys' and single-sex girls' schools' (Chapter -I).

In order to find out the differences between the means of the three groups, Analysis of Variance(ANOVA) was

used and F-ratio was calculated.

The three groups included in this study for comparing the differences between the means were single-sex male, single-sex female and co-education. The F-ratio with 6.56 (Chapter-IV) was found significant at .05 as well as .01 level ($F(2,147) = 6.56$, $F > .05$ & .01).

The result clearly indicates that the students of all the three schools do not only perceive their institutional environment as different from other but they also have a strong feeling about this difference. The difference between them might be in terms of the school discipline, the importance given by the teacher or the institution towards achievement or it may be in terms of pupil-pupil and pupil-teacher relationship. The result however supports the investigator's view point and therefore, the hypothesis have been supported.

The problem with the investigator was to find out which school is more significantly different from the other in respect of the environment as perceived by their students. In order to find out the difference between two means and to test its significance t-ratio was calculated. This was needed to test the third and fourth hypotheses (Chapter-I).

When single-sex male and single-sex female were compared, the t-value was found 2.97 (Chapter-IV) which is

significant at .05 as well as at .01 level(t>.05 & .01).

From this result it can be interpreted that the students of single-sex male schools perceived their school as extending more pressure on the students condusive for higher performance in different school activities as compared to the environment of single-sex girls' school. When single-sex female was compared with co-education, the t-value was 3.27 which is also significant at .05 as well as .01 level (t>.05 & .01). As interpreted earlier there is also significant difference between the environmental press of single-sex female and co-education. But when single-sex male and co-education was compared the t-ratio was not significant at .05 level, this means that there is insignificant difference between the perception of the students of single-sex male and co-educational institutions(Chapter-IV).

From the above result it can be interpreted that the environment prevailing in single-sex male schools and the co-educational institutions are almost the same at least to the extent of student perception, whereas the environment of the single-sex girls' school is sharply different from both of the above schools. These results conform the investigator's hypotheses and therefore, fourth hypothesis has been accepted.

Now the question with the investigator is to see the difference between the perception of boys and girls within the co-educational schools, which is the second hypothesis (Chapter-I). To find the difference between the perception of the two sexes in the same environment, the means of the two group were compared and the t-value was 7.5. From this comparision it has been found that no significant difference between the perception of the two sexes as regard to their environment. This result has further helped the investigator to conclude that students of both the sexes are getting equal treatment with least discrimination. On the basis of this finding the hypothesis No.2 (Chapter-I) has been accepted.

As it can be seen from the questionnaire (Appendix -I) the environmental press was purposefully divided into four factors consisting of eight statements in each factor. It was threfore, not much difficult for the investigator to locate the areas of greater difference than those of less differences. For this purpose the means of the three groups (male, female & co-education) in all four factors were compared. There were three schools and the number of factors for comparing the means were four. As such 4 x 3 = 12 groups were to be compared and clustered

into three groups. Once again the F-ratio for three groups in four factors were calculated to make sure about the existence of the difference between the means.

When single-sex male and single-sex female and co-education in factor A (Strong Intellectual Orientation) were compared, the F-ratio was 5.10 (F (2,147) =5.10, F >.05 & .01).

This result shows that there is a vast difference betwe n the approaches of the three schools as regard to intellectual orientation which further means that the groups with higher means think that the total school environment presses them hard for higher achievement, high standards and is more concerned with academic achievements of the students. The activities within the school and the facilities needed in this respect are also available in the schools while the schools with lesser means do not give much importance towards high academic achievements and other facilities needed for maintaining high standards.

When single-sex male, single-sex female and co-education were compared in factor B (School Activities), the F-ratio was 4.03 (F (2, 147) = 4.03, F >.05 & .01) level. This F-ratio once again conforms that there is also a highly significant difference between the three schools as regard to school activiteis which infers that one shcool provides

more opportunities and facilities in performing various types of school activities as compared to the other schools.

But when the three were compared in factor C(strong Environmental control) the F (2,147) =2.15 (F<.05). This result indicates that so far as the strong environmental control of the three schools is concerned, the students of the schools placed equal emphasis on the control and discipline of their school.

The results threfore, infer that inspite of the fact, there is the significant variation in the perception of the students as regards to the academic achievement but in the perception of the students, the discipline and the control demanded by the schools' environment is almost similar in the three schools.

Similarly, the F-ratio (F (2,147) = 2.85) associated with the factor D (Negative Attitude Toward Environment) was insignificant at .05 level (F<.05).

This result once again helps to conclude that the students of all the three schools perceive almost in the same way towards the negative effect of the environment which means that the factors which are disliked by one school are also not appreciated by the students of the schools.

There seems to be least variation in their appraisal.

With these findings the task of the investigator moves towards the third hypothesis that the single-sex girls' school perceive the co-educational schools and the boys' schools environment as facilitating and putting less emphasis on control and discipline and as compared to other factors.(Chapter-I).

In order to test this hypothesis it is essential to find out the difference between each of the four factors of the environmental press as regard to the sex, school-type and grade. The significant difference between the three schools has already been established by the use of F-ratio. The significant difference between the factors can be calculated and tested by the use of t-test of the total scores of three variables. The comparision of means of the four factors were made between the following groups:-

1) Single-sex male/single-sex female
2) Single-sex female/co-education
3) Co-education/single-sex male.

When single-sex male & single-sex female were compared in factor A (Strong Intellectual Orientation), the t-value = 3.07 was significant at .05 as well as at .01 level ($t > .05$ & .01). When single-sex female was compared with co-education, the t-ratio = 2.53 was found significant

at .05 level but insignificant at .01 level (t>.05 & t<.01). But the difference was found insignificant between the perception of the students of male and co-educational schools in factor A with t=·60(t<.05 & .01).

The above analysis shows a very interesting result that their respective schools pay much emphasis on students achievement and the school standard as compared to their counterpart single-sex girls' school. This result therefore, qualifies the investigator to reject the last part of the third hypothesis.

The t-ratio = 2.45 between the single-sex male and single-sex female in factor B (school activities) was found significant at .05 level but insignificant at .01 level.(t>.05 & t<.01). However, the difference was found significant between female and co-education t= 2.62 (t>.05 & .01). But when co-education was compared with single-sex male the t= .21 shows least difference between the two groups (t<.05 & .01).

In respect of the schools' activities the results show that better facilities are available in the boys schools and the co-educational institutions as compared to the single sex girls' school. In other words, it can be interpreted that the girls' school is not paying much attention towards non-academic or co-curricular activities. This result can

reasonably be accepted because it is obvious that the girls population of Aligarh Muslim University School is predominantly from muslim families. Since, the muslim culture do not permit their girls to participate in co-curricular activities such as drama , musical concerts, dancing and other similar activities. The activities are suppose not to be very common in this school. On the basis of this finding the investigator is at liberty to reject the hypothesis.

In case of factor C (Strong Environmental Control) the calculated t -ratios are:-

1- Single-sex male/single-sex female = .48
insignificant ($t < .05$ & .01).

2- Single-sex female/co-education = 2.04
significant at .05 & insignificant at .01 level
($t > .05$ & $t < .01$).

3- Co-education/single-sex male = 1.58
insignificant ($t < .05$ & .01).

The t-values show that there is no difference between single-sex male and single-sex female and between single-sex male & co-education, so far the control and discipline of the school is concerned. However, the difference has been observed between single-sex female and co-education at .05 level but no difference could be found at .01 level. This shows that the co-educational institution is to a certain

extent more facilitating as compared to single-sex schools, but to a large extent all the three schools have equal emphasis on control and discipline. On the basis of this fact the first half of the third hypothesis may be accepted.

As regards to factor D (Negative Attitude Toward the Environment) the t-ratio between single-sex male and single-sex female is 5.36, which is highly significant at .05 & .01 level (t>.05 & .01). The difference between single-sex female and co-education was (t = 2.3) found significant at .05 level but insignificant at .01 level. But when single-sex male were compared with co-education in the factor D the t- ratio = 4.25 shows the highly significant difference at .05 as well as at .01 level (t >.05 & .01).

The above results once again reverse the order and makes the study more interesting. The significant difference regarding the attitudes of the boys and girls show th t the boys do not appreciate the style of their school discipline as compared to the girls. In fact, the boys schools being more aggressive in nature are expected to show their resentment against regimentation and normative type of discipline which is a common factor of the schools who care to maintain the school standard.

The above statement has further been confirmed by the significant difference which has been observed between

single-sex male and co-educational institutions. The difference between single-sex girls' school and the co-educational insitution has been significant at .05 level but insignificant at .01 level which shows that the students of the two schools have similar attitudes regarding factor D. This similarity may be because of the social status & nature of the girls.

The investigator is of the opinion that the difference should be calculated on the basis of the comparision between the males and females of the co-educational institution with those of single-sex male and female separately without which the real difference between the sexes could remain unsatisfactory. It is because of this vital importance of the study the investigator calculated means of the male and female students of co-educational for the purpose of comparision with other sister institution.

When single-sex male & male of co-educational institution was compared in factor A, the t = 1.33 insignificant ($t < .05$ & $.01$). But the two in factor B shows highly significant difference with t=3.15 significant at .01 level. Again in factor C & D , the difference in two was not found significant as t= .33 & 1.26 respectively.

This finding shows that there is not significant difference in the perceptions of male students of the two types of institutions except in their school activities.

The result shows no difference in respect of academic achievement. The same result has been verified in other comparison made in this study. Needless to emphasis once again that the academic environment of both the schools as perceived by the male students is similar. However, the visible difference lies in the area of school activities. The students of the single-sex school with higher mean show that their school provides and emphasize more on curricular activities as compared to single-sex male schools. In fact, the co-educational institution is a private body maintained by the christian missionaries, obviously in order to show their excellence for attracting superior students they have to equip the school with better game and sport materials as well as better school programmes.

There seems no difference in the areas of strong Environmental Control & Negative Attitude Toward Environment. The same results have been found in earlier comparison as shown in the study. Thus, the investigator can safely conclude that in these two areas there is no difference in the perception of the male students of the two schools.

Similarly, when single-sex female were compared with co-educational female in factor A, t = 4.24, indicates a significant difference at .05 & .01 level (t> .05 & .01), in factor B, the t-ratio = 4.45, once again shows significant difference at .01 level (t> .01). But in factor C & D no significant difference was found as t = .08 & .06 respectively.

The above results show that the girls of the co-educational institutions perceive their school environment placing more emphasis on intellectual achievement and in school activities as compared to the females of single-sex school. Regarding discipline & control and negative attitude the behaviour of the students of the two schools among the same sex is found insignificant.

These results enable the investigator to partly accept and partly reject the hypothesis(5) that there is no difference among the similar sexes of the three schools as regard to four factors of the environmental press.

To test the last two hypotheses, the data of value climate (Appendix -II) of the three schools were analyzed and the scores were ranked in order of preference. For the ranking purpose there were eight judges who had to rank the items in order of their preference. The rank given by all the eight judges have been presented in table (Chapter-IV) and histograms have also been made to show the differences in rank

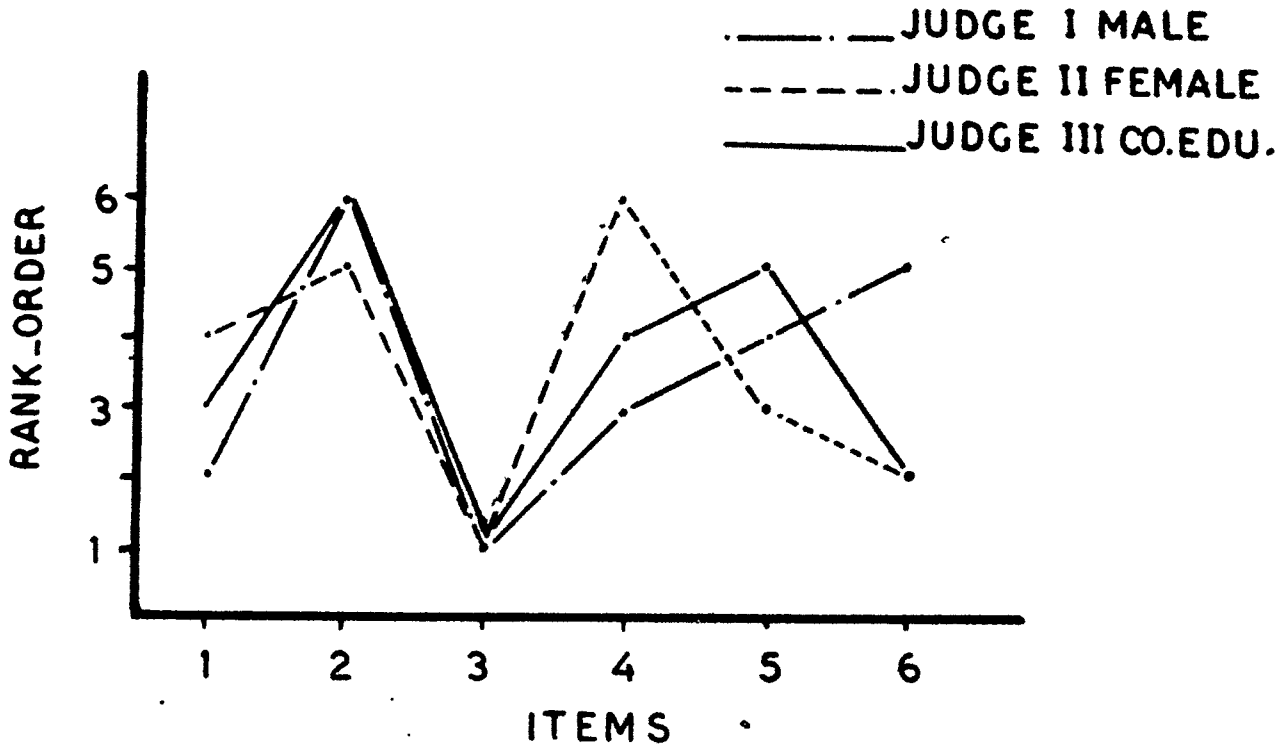
orders of male, female and co-education (Fig. 7) and between male and female students of the co-educational institution (Fig. 8).

After ranking Spearman's (rho) rank difference correlation of co-efficient was also calcul ted. The judges have been numbered as I, II to VIII (Chapter-IV).

When the rank order given by the judge I was compared with judge II (single-sex male Vs single-sex female) the r = .32 which was found significant t .05 level but insignificant at .01 level. It shows th t the girls and boys of the age group of 14-16 years have signi- fic nt d ff r nc in th ir values. This difference can lso be verify by making an item-wise comparison.

The table shows th t both male and female have given first preference to the item third that is'getting high grade in school', but they are poles apart in their values as regards to be an athletic star (It m No.4). Male students have given third preference to this item but the females have given it the sixth place. This difference might be because of their perception, cultural limitations and social binding or because of their awareness of their physique. In all other cases though differences are availa- ble but they are negligible.

When Judges II & III were compared the rho was found as .72 which indicates that there is high relationship



CURVES SHOWING COMPARATIVE VARIATION IN VALUE CLIMATE AMONG THE THREE JUDGES OF THREE DIFFERENT SCHOOLS

(FIG-9)

between the value-judgement of the two judges. This can also be verified by the P-table. These two judges also gave first preference to item third that is getting high grades in the schools. Surprisingly, both have given second preference to item number six that is impressive personality. The highest difference was found in the fourth item, to be an athletic star. The variation in the value judgement of the three judges has been shown in the graph (Fig.9).

This result shows that both gave equal value to the impressive personality but the co-educational students gives more value to item four than the single-sex females who gave it sixth position. Being athletic star is valued by the co-educational students as of greater value than the female students.

When judges I & III were compared the r= .66 was also found significant at .01 level. It shows that order of preference of the single-sex male and the co-educational students are same to high degree. Once again both judges have declared the item getting high grade as the most valuable factor in school life. The difference however, lies in item six, the male students have given this item fifth place while co-educational institution has given it

the second place. This difference between the value judgement of the two judges indicate that in the eyes of the co-educational children, having impressive personality is very important where as the same has less value in the eyes of the boys. This result is based on the fact that in co-educational institution because of the presence of the both the sexes, there is every possibility that the students of one sex may try to impress the students of the other sex by their dress and smartness, this difference is therefore, natural for the adolescents.

The above comperision made by the three judges gives an over-all picture of the differences that exist in value judgement of the three schools. The sixth hypothesis that 'there is no significant difference in the value judgement between the single-sex male and co-educational institutions' has therefore, been accepted.

After computing the overall picture of the three schools separately the main task with the investigator was to compare the value juogement of the two, male & female, judges of the co-educational institutions. It has been hypothesized that 'there is difference between the value judgement of the two sexes in the same environment' (Hypothesis 7).

When 'r' between males & females of co-educational institution was calculated, it was found that r = .95 which

Table Showing Rank-Orders by Eight Judges

Items	Judges							
	I	II	III	IV	V	VI	VII	VIII
Leader in Activities	2	4	3	3	2	1	3	4
Having Money	6	5	6	6	6	2	6	3
High Grades	1	1	1	1	1	6	1	1
Athletic Star	3	6	4	4	4	3	5	5
Good Looking	4	3	5	5	5	4	4	6
Impressive Personality	5	2	2	2	3	5	2	2

is highly significant and shows a greater similarities between the value judgement of the two sexes. This can also be evident by looking rank order of the two judges.

Genuinely, they have given same values to item numbers 2,3,4,5 & 6. However, the minor difference can be found in item No.1 which is perfectly ignorable because of rank-order being the crude form of calculating the preference. With r= .95, it may be concluded that there is no difference between the two sexes in the same environment and therefore,the hypothesis has been rejected. But this finding can be placed in support of the fact that this study has genuinely been done and the ranks were independently without least prejudice.

CONCLUSION:

An overall view of the value preference of the eight judges have also been presented here in the attached table to give a clearer view of the judgement done by various judges.

A study of the table can supply a concrete idea about the influence that facilitate the perception of the students of the schools under study regarding the pressure that is laid by the school environment.

In the first place it can safely be concluded that environment of all the three schools give almost equal emphasis on academic achievements, inspite of some variation.

Secondly, very little difference can be witnessed between the schools as regard to the item of leadership in the value climate scale. The population of the three schools which have been selected for this study was having almost similar socio-economic status and cultural background. The schools do have areas of preference and provisions of developing leadership quality in our students also exist in these schools. It is because of this reason the variation in item third varies between two and three ranks.

The vast difference which is found between the judges VI & VIII is in the case of low scores of male and co-educational groups. This difference however, not worth considering because they are suppose to have negative attitude towards the school environment and perhaps lacking social and emotional stability and wrong perception with negative attitudes toward school environment. The Judge VI has shown maximum deficiency in varying item number three as six. While every other group has graded this item as first. This is only the group which has given it least

preference. This is a group which represent low male scorers in the environmental press. It is environment as facilitating and negative are expected to give least value to high academic achievement and rightly they can think of being leader to win higher place among the students and teachers by their leadership qualities.

It could not be out of place to mention that the investigator has also compared the difference of means between four judges in respect of the value -climate. The means of the four judges compared were co-educational male & female, single -sex male and single-sex female (Chapter IV). The comparative statement of the means shows the variance between the means of different groups. The lowest the mean, highest is the preferential order in terms of merit.

When the mean of the meanswere calculated, it was found that high grade (Item No.3) got the first preference by almost all the groups putting together and the sixth item was given second, leadership was given third, athletic star was given fourth, good looking as fifth and more money has been given the sixth place in order of merit.

An overall analysis of the findings based on Environmental Press and Value-Climate have provided sufficient ground to the investigator reach to a few difinite

conclusions.

Environment of the school has a direct impact on the value system of the High School students.

The students at this level give first priority to the achievement of the higher grades if the school environment is based on high intellectual orientation.

Being wealthy or rich is not considered as a matter of great value by the adolescents of today within the school environment. Instead of that higher importance has been given to the items like impressive personality, athletic star and being leader. This shows that if a proper environment, conducive to academic achievement and curricular activities is generated in the school. There is no reason why we would not be able to raise our school standards in terms of academic achievements, games and sports.

It may also be concluded that such an environment will not press the students for high achievement and develop reasonable leadership qualities but could also effect favourably on their value judgement.

The main objective of such a study as has been pointed out in Chapter -I was to establish the superiority

of school environment over the other in terms of the development of desirable students' personality. Our schools as has been pointed out earlier are committed to produce integrated and balanced personalities and productive members of the society. The Iranian youth are to be educated in an environment which could train them simplicity, justice, fraternity, respect for democratic society, love and affection with other fellow-members.

The schools which have the potential of developing these qualities deserve every support and appreciation.

The present study can be taken as an index towards this end.

SUGGESTIONS:

On the basis of the analysis and findings the investigator is now in a position to mention following suggestions:

1- In view of the size and depth of the problem, this study is very limited. The findings of this study should therefore, be taken only as an index for further more extensive studies. The generalizations may however very if a larger number of schools are included for the study.

2- The investigator because of her limitations could not include other variables like student achievement, teacher-pupil relationship, ratio of male and female teachers and socio-economic status of the students. These factors play an important role and any with these variables may end up with more valuable conclusions.

3- This study however, poses many challenges before the researches and scholars for a longitudinal study.

4- This study very wagely indicates that the girl students with exclusively female teachers and male students exclusively with male teachers are not comfortably adjusting. It may be suggested that a mixed type schools with mixed teaching staff may be more productive.

5- Inspite of the fact, the investigator has put in, maximum labour what she had at her command within this limited period in analyzing and interpreting the data.

The investigator is conscious of the many short-comings of the present research, but in view of the importance of the study it is being submitted with the hope that it will stimulate further research in this area.

C H A P T E R -VI

APPENDIX

* Questionnaires
* Scoring Sheets
* Bibliography

Appendix -I

MEASURES OF ENVIRONMENTAL PRESS

Dear Students,

This questionnaire has 32 items. Every item has three possible responses. You have to give your opinions as it actually happens in your school. Put a mark (X) in anyone of the three responses which you think is correct.

Example:	Always	Often	Never
Students with high scores in the subject are appreciated in my school.	(X)	( )	( )

In the above example the mark(X) has been put under the response(always) because in the opinion of this student, the students with high scores in the subject are(always) appreciated in my school.

Please be sure that your responses will be kept strictly confidential and would only be used for research purpose. You are therefore, expected to give your free and frank opinion.

Your cooperation will be appreciated.

Thanks,

Yours sincerely,

(MUMTAZ BEGUM)

Name of the School:_____

Class:_ _____

Age:_____Sex:_____

	Always	Often	Never
1. Students with high scores in the subject are appreciated in my School.	( )	( )	( )
2. School provides facility to make friends.	( )	( )	( )
3. The teacher demands too much respect from the students.	( )	( )	( )
4. The teacher very often make us feel like a child.	( )	( )	( )
5. Students get ample time for reading books other than text books.	( )	( )	( )
6. Inter-class tournaments of various games are regularly arranged.	( )	( )	( )
7. Free communication between teacher and student is not possible.	( )	( )	( )
8. It is more a dictation rather than guidance by the teacher.	( )	( )	( )
9. There is a lot of competition for high grades.	( )	( )	( )
10. We get ample time for group discussion. (	( )	( )	( )
11. We do not have the choice to use the things of our own.	( )	( )	( )
12. No effort are made for the development of self-confidence in our school.	( )	( )	( )

	Always	Often	Never
13. Extra Guidance by teahcers is available.	( )	( )	( )
14. Our personal desires are hardly appreciated in this school.	( )	( )	( )
15. I like this school because there are many things in the school where we can easily participate.	( )	( )	( )
16. Unquestioned obediance of teachers is the thing that is highly appreciated in this school.	( )	( )	( )
17. Opportunities for participating in debates and other literary work are open to all.	( )	( )	( )
18. The problem with us is that we are genrally disbelieved.	( )	( )	( )
19. The School is the best place where I enjoy the most.	( )	( )	( )
20. Students who tend to say or do any thing have a hard time here.	( )	( )	( )
21. Every student is free to join musical and artistic activities.	( )	( )	( )
22. School helps in developing our physical and intellectual characteristics.	( )	( )	( )
23. Many situations arise when we have to play undue respect to the teachers.	( )	( )	( )
24. Every one has the same opportunity to get good marks in this school because the tests are marked very fairly.	( )	( )	( )

	Always	Often	Never
25. School has sufficient provision for extra curricular activities such as sports, debates, essay and art competition etc.	( )	( )	( )
26. I feel bored when the school is closed because I miss my friends.	( )	( )	( )
27. At every step we have to obey teacher's command.	( )	( )	( )
28. I know, what I deserve, always get it.	( )	( )	( )
29. Students are free to make their choice independently.	( )	( )	( )
30. Every one has a lot of fun in this school.	( )	( )	( )
31. Teachers usually go out of their way to make sure that the students address them with due respect.	( )	( )	( )
32. It is I who suffered the most because the teachers dislike me.	( )	( )	( )

-.-.-.-.-.-.-

Appendix -II

MEASURES OF THE VALUE CLIMATE

Dear Students,

You will find attached, a list of six items. You have to rank these items in order of your preference in the following manner.

1) The item which you think is the most important should be ranked as (No -1).

2) The next important item should be numbered as (2).

3) Similarly, you have to put No.-6, against the item which is least important to you.

Before you start ranking, please read all the six items carefully. If you have any problem do not hesitate to ask the investigator.

Your cooperation will be appreciated.

Thanks,

Yours sincerely,

(MUMTAZ BEGUM)

Name of the School;_____

Class: _____

Age:_____ Sex:_____

I wish to

1- be a leader in school activities ( )

2- have sufficient amount of money to spend according to my desire. ( )

3- get high grades in class so that my name may appear in the honours role of the school. ( )

4- be an athletic star. ( )

5- be good looking ( )

6- have an impressive personality ( )

-.-.-.-.-.-.-

Appendix -III (a)

S.T. HIGH SCHOOL (MALE)

No.	FACTOR								TOTAL SCORES	
	A	A^2	B	B^2	C	C^2	D	D^2	T	T^2
1.	15	225	13	169	7	49	8	64	43	1849
2.	9	81	9	81	10	100	9	81	37	1369
3.	16	256	9	81	11	121	10	100	46	2116
4.	16	256	14	196	14	196	14	196	58	3364
5.	8	64	12	144	5	25	9	81	34	1156
6.	12	144	12	144	12	144	10	100	46	2116
7.	13	169	12	144	12	144	6	36	43	1849
8.	10	100	10	100	10	100	8	64	38	1444
9.	11	121	11	121	9	81	5	25	36	1296
10.	10	100	8	64	7	49	5	25	30	900
11.	13	169	13	169	12	144	7	49	45	2025
12.	8	64	7	49	7	49	3	9	25	625
13.	9	81	9	81	10	100	8	64	43	1849
14.	10	100	8	64	8	64	7	49	33	1089
15.	11	121	6	36	8	64	8	64	36	1296
16.	15	225	12	144	7	49	7	49	41	1681
17.	9	81	3	9	2	4	2	4	16	256
18.	9	81	7	49	5	25	3	9	24	576
19.	15	225	15	225	12	144	7	49	49	2401
20.	13	169	11	121	10	100	12	144	46	2116
21.	11	121	11	121	10	100	6	36	38	144
22.	9	81	8	64	66	36	7	49	30	900
23.	13	169	11	121	12	144	10	100	46	2116
24.	10	100	5	25	10	100	8	64	33	1089
25.	9	81	7	49	9	81	6	36	31	961
26.	14	196	10	100	7	49	4	16	35	1225
27.	14	196	10	100	14	196	9	81	47	2209
28.	15	225	13	169	12	144	10	100	50	2500
29.	13	169	9	81	7	49	9	81	38	1444
30.	9	81	5	25	5	25	7	49	26	676

Contd.....

31.	9	81	11	121	9	81	7	49	36	1296
32.	5	25	4	16	11	121	6	36	26	676
33.	8	64	11	121	7	49	9	81	35	1225
34.	6	36	8	64	6	36	10	100	30	900
35.	15	225	10	100	14	196	11	121	50	2500
36.	13	169	18	324	9	81	6	36	38	1444
37.	8	64	9	81	8	64	5	25	30	900
38.	13	169	10	100	6	36	7	49	36	1296
39.	13	169	12	144	9	81	15	225	49	2401
40.	9	81	8	64	11	121	9	81	37	1396
41.	13	169	11	121	7	49	6	16	35	1225
42.	15	225	13	169	11	121	10	100	49	2401
43.	13	169	14	196	10	100	11	121	45	2025
44.	13	169	6	36	8	64	5	25	32	1024
45.	15	225	14	196	10	100	10	100	49	2401
46.	12	144	12	144	12	144	9	81	45	2025
47.	11	121	11	121	12	144	8	64	42	1764
48.	8	64	9	81	8	64	9	81	34	1156
49.	8	64	8	64	11	121	11	121	38	1444
50.	12	144	9	81	9	81	3	9	33	1089
Total:	568	6828	498	5390	458	4530	389	3299	1912	76523

Appendix -III (b)

GIRLS HIGH SCHOOL (FEMALE)

No.	FACTOR								TOTAL SCORES	
	A	A^2	B	B^2	C	C^2	D	D^2	T	T^2
1.	13	169	13	169	8	64	6	36	40	1600
2.	15	225	13	169	10	100	5	25	43	1849
3.	14	196	10	100	9	81	8	64	41	1681
4.	12	144	7	49	8	64	7	49	34	1156
5.	10	100	11	121	10	100	6	36	37	1369
6.	15	225	11	121	6	36	8	64	40	1600
7.	8	64	10	100	10	100	9	81	37	1369
8.	8	64	6	36	8	64	8	64	30	900
9.	9	81	12	144	4	16	7	49	32	1024
10.	12	144	10	100	9	81	6	36	37	1369
11.	16	256	11	121	9	81	7	49	43	1849
12.	7	49	5	25	10	100	4	16	26	676
13.	10	100	9	81	8	64	7	49	34	1156
14.	8	64	9	81	7	49	6	36	30	900
15.	13	169	12	144	2	4	5	25	32	1024
16.	10	100	10	100	11	121	11	121	42	1764
17.	4	16	8	64	8	64	6	36	26	676
18.	6	36	1	1	9	81	6	36	22	484
19.	10	100	11	121	10	100	11	121	42	1764
20.	14	196	10	100	9	81	7	49	40	1600
21.	6	36	5	25	11	121	6	36	28	784
22.	14	196	12	144	10	100	5	25	41	1681
23.	9	81	5	25	8	64	6	36	28	784
24.	10	100	15	225	8	64	9	81	42	1764
25.	9	81	8	64	4	16	6	36	27	729
26.	11	121	9	81	5	25	3	9	28	784
27.	7	49	5	25	3	9	6	36	21	441
28.	10	100	7	49	11	121	7	49	35	1225
29.	8	64	8	64	11	121	4	16	31	961
30.	14	196	11	121	7	49	4	16	36	1296

Contd.....

31.	7	49	5	25	8	64	8	64	28	784
32.	8	64	10	100	8	64	7	49	33	1089
33.	13	169	8	64	9	81	8	64	38	1444
34.	8	64	7	49	12	144	9	81	36	1296
35.	8	64	5	25	8	64	6	36	27	729
36.	10	100	8	64	7	49	9	81	34	1156
37.	9	81	4	16	12	144	10	100	35	1225
38.	6	36	6	36	11	121	6	36	29	841
39.	9	81	5	25	8	64	8	64	30	900
40.	13	169	12	144	11	121	8	64	44	1936
41.	10	100	8	64	11	121	4	16	33	1089
42.	8	64	5	25	8	64	8	64	29	841
43.	0	0	4	16	6	36	7	49	17	281
44.	11	121	9	81	6	36	6	36	32	1024
45.	8	64	2	4	8	64	6	36	24	576
46.	9	81	11	121	4	16	7	49	31	961
47.	13	169	13	169	8	64	6	36	40	1600
48.	12	144	12	144	7	49	9	81	40	1600
49.	14	196	9	81	6	36	9	81	38	1444
50.	9	81	5	25	8	64	6	36	28	784
Total:	497	5419	422	4048	409	3607	343	2505	1671	57886

Appendix -III (c)

OUR LADY OF FATIMA HIGHER SECONDARY SCHOOL

(CO-EDUCATION)

No.	FACTOR								TOTAL SCORES	
	A	A^2	B	B^2	C	C^2	D	D^2	T	T^2
1.	12	144	15	225	6	36	6	36	39	1521
2.	14	196	9	81	11	121	7	49	41	1681
3.	12	144	10	100	9	81	7	49	38	1444
4.	14	196	10	100	8	64	8	64	40	1600
5.	14	196	15	225	10	100	9	81	48	2304
6.	8	64	7	49	10	100	5	25	30	900
7.	7	49	6	36	8	64	9	81	30	900
8.	7	49	10	100	6	36	10	100	33	1089
9.	11	121	8	64	3	9	6	36	28	784
10.	9	81	6	36	10	100	4	16	29	841
11.	12	144	8	64	10	100	4	16	34	1156
12.	16	256	12	144	4	16	5	25	37	1369
13.	12	144	9	81	6	36	7	49	34	1156
14.	14	196	13	169	6	36	6	36	39	1521
15.	15	225	13	169	7	49	6	36	41	1681
16.	12	144	9	81	3	9	5	25	29	841
17.	13	169	11	121	8	64	8	64	40	1600
18.	13	169	13	169	5	25	6	36	37	1369
19.	6	36	9	81	6	36	3	9	24	576
20.	7	49	5	25	7	49	6	36	25	625
21.	16	256	13	169	7	49	7	49	43	1849
22.	16	156	13	169	8	64	7	49	44	1936
23.	15	225	14	196	9	81	11	121	49	2401
24.	13	169	13	169	11	121	8	64	45	2025
25.	15	225	7	49	5	25	9	81	36	1296

Contd.....

26.	15	225	10	100	8	64	4	16	37	1396
27.	10	100	9	81	15	225	11	121	45	2025
28.	13	169	9	81	12	144	6	36	40	1600
29.	10	100	8	64	8	64	9	81	34	1156
30.	11	121	7	49	10	100	5	25	33	1089
31.	8	64	5	25	6	36	7	49	26	676
32.	10	100	14	196	9	81	8	64	41	1681
33.	8	64	8	64	10	100	8	64	34	1156
34.	10	100	8	64	6	36	7	49	31	961
35.	11	121	10	100	8	64	8	64	38	1444
36.	11	121	8	64	9	81	8	64	35	1225
37.	14	196	11	121	9	81	6	36	40	1600
38.	14	196	10	100	10	100	9	81	43	1849
39.	14	196	13	169	7	49	5	25	40	1600
40.	7	49	4	16	9	81	6	36	26	676
41.	13	169	13	169	11	121	7	49	45	2025
42.	16	256	13	169	8	64	8	64	45	2025
43.	8	64	7	49	12	144	9	81	38	1444
44.	8	64	10	100	9	81	7	49	34	1156
45.	10	100	8	64	12	144	8	64	38	1444
46.	11	121	5	25	13	169	7	49	36	1296
47.	13	169	10	100	11	121	11	121	45	2025
48.	12	144	11	121	10	100	8	64	41	1681
49.	11	121	12	144	7	49	7	49	36	1396
50.	13	169	11	121	8	64	7	49	39	1521
Total:	584	7202	492	5228	420	3834	355	2683	1854	70612

Appendix -IV (a)

CO-EDUCATION (MALE)

No.	FACTORS							
	A_1	A^2	B_1	B^2	C_1	C^2	D_1	D^2
1.	7	49	10	100	6	36	10	100
2.	8	64	8	64	13	169	18	324
3.	13	169	11	121	8	64	7	49
4.	11	121	8	64	9	81	8	64
5.	11	121	10	100	11	121	11	121
6.	13	169	10	100	11	121	11	121
7.	7	49	4	16	9	81	6	36
8.	6	36	9	81	6	36	3	9
9.	9	81	6	36	10	100	4	16
10.	13	169	9	81	12	144	6	36
11.	7	49	5	25	7	49	6	36
12.	12	144	8	64	10	100	4	16
13.	10	100	9	81	15	225	11	121
14.	11	121	5	25	13	169	7	49
15.	10	100	9	86	12	144	8	64
16.	8	64	7	49	12	144	9	81
17.	12	144	15	225	6	36	6	36
18.	14	196		81	11	121	7	49
19.	12	144	10	100	9	81	7	49
20.	14	196	10	100	8	64	8	64
21.	8	64	7	49	10	100	5	25
22.	13	169	11	121	8	64	8	64
23.	8	64	5	25	6	36	7	49
24.	11	121	7	49	10	100	5	25
25.	10	100	8	64	8	64	9	81
Total:	258	2804	197	1871	222	2338	146	1600

Appendix -IV (b)

CO-EDUCATION (FEMALE)

No.	FACTORS							
	A_2	A^2	B_2	B^2	C_2	C^2	D_2	D^2
1.	14	196	13	169	7	49	5	25
2.	14	196	10	100	10	100	9	81
3.	7	49	6	36	8	64	9	81
4.	11	121	12	144	7	49	7	49
5.	16	256	13	169	7	49	7	49
6.	14	196	13	169	6	36	6	36
7.	12	144	9	81	3	9	5	25
8.	11	121	10	100	8	64	8	64
9.	15	225	14	196	9	81	11	121
10.	10	100	8	64	6	36	7	49
11.	8	64	10	100	9	81	7	49
12.	13	169	13	169	5	25	6	36
13.	15	225	10	100	8	64	4	16
14.	13	169	13	169	11	121	7	49
15.	15	225	13	169	7	49	6	36
16.	8	64	8	64	10	100	8	64
17.	10	100	14	196	9	81	8	64
18.	13	169	13	169	11	121	8	64
19.	14	196	11	121	19	361	6	36
20.	12	144	9	81	6	36	7	49
21.	16	256	12	144	4	16	5	25
22.	12	144	11	121	10	100	8	64
23.	16	156	13	169	8	64	7	49
24.	15	225	7	49	5	25	9	81
25.	14	196	15	225	10	100	9	81
Total:	318	4206	280	3274	203	1881	166	1343

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