CHAPTER-III

METHOD AND PROCEDURE

In this chapter the method and procedure of the study are discussed under the following four heads and their sub-heads.

1) Theoretical Background

2) Flow chart of the Research

3) Research Design.

A) Preparatory Stage:

1. Selection of behaviour problems
   a) Exhaustive list of behaviour problems
   b) Reduced list by systematic procedure
      i) Sample
      ii) Tool
      iii) Compiling the list

2. Tools Discussion
   i) Main Tool
      a) Text of tool purpose
      b) Tryout
      c) Establishing Reliability/Validity
   ii) Other tools
      a) Rating Scale - ARPRS
B) Check List - ABPCL

c) Academic Achievement

B) Main Study -

1) Sample Selection Sampling Procedure

A) Sample - adolescents profile and general information

B) Sample - Teaching Staff - Profile and general information

C) Sample - Educationists/Psychologists

2) Tools

HWool No. 1 - ABPQ

1. Construction

2. Standardization

3. Method of data collection

4. Scoring the ABPQ

Tool No. 2 - ABPRS

1. Construction

2. Tryout

3. Method of data collection

4. Scoring the ABPRS

5. Method of data analysis

Tool No. 3 - ABPCL

1. Construction and method of data collection

2. Scoring the ABPCL
Tool No. 4 - PACL

3) Method of Analysis -

Part-I : Adolescent Behaviour problems as perceived by Teaching staff.

Part-II : Adolescent Behaviour problems as perceived by Educationists/Psychologist.

Part-III : Adolescent Behaviour problems as perceived by Adolescents.

Part-IV : Relationship of Adolescent Behaviour problems with the selected ten Demographic Variables.

Part-V : Relationship of Adolescent Behaviour Problems with their Academic Achievement.

Part-VI : A correlative study of Adolescent Behaviour problems as perceived by Teaching Staff, Educationists/Psychologists and Adolescents.

C) Confirmatory Study

4) Procedure

1) A) Preparatory stage

   a) Selection of behaviour problems

   b) Tools

B) Main study
1. Collection of data from Adolescents

2. Collection of data from Teaching staff

3. Collection of data from Educationist/ Psychologists

2) Type of data collected.

3) Method of Data Analysis.

I) THEORETICAL BACKGROUND

The present study of the behaviour problems and certain demographic variables of adolescents in relation to their academic achievement may be vaguely conceived of as a public opinion study. From its very nature it is indicative of a normative survey involving no experimentation. The survey method is the most popular research design selected by most research workers. If the present study is to follow the survey method it is necessary to weigh the advantages and disadvantages of the method and see how best the present problem is tackled by the survey method and why the survey method is the only method suitable for the study.

In the research process the term 'Survey' refers to a way of making observations, where the indicator of variables are answers to questions presented either verbally or in writing. (Walizer M.H., Wienir P.L., 1978, p. 265).

* It is vaguely conceived of, as another term for public opinion studies. (Galtung Johan1969, p. 129). Black J.A. and Champion D.J. (1976, p.85) define survey as, "Specifications of procedures for gathering information about a large number of people by collecting information from a few of them." It is basically cross-sectional. Survey is characterized by disciplined inquiry, requiring expertise objectivity and careful execution.

The situation in a survey is neither controlled nor manipulated as in the present study - it will be conducted at one point in time. Changes in variables are the result of naturally occurring events and not result of manipula-
tion, as in experimental method. The researcher will collect data about behaviour problems as perceived by adolescents, teaching staff and educationists/psychologists, without manipulating their situations, therefore the changes or differences found will be the result of naturally occurring events. In survey, the researcher has to discover circumstances where the variables are of different values. The demographic variables and academic achievement will indicate the type and frequency of behaviour problems in adolescents - this is what the researcher will have to discover.

The present study is exploratory by nature the field study being an ex-post facto research. Such research seeks to find the answers to questions through analysis of variable relationship. It seeks to find out which demographic factors or levels of academic achievement seems to be systemically associated with occurrence of certain behaviour problems, conditions etc. Since it is often impracticable to arrange occurrences, an analysis of what actually does happen, is the only feasible way to study causation.

Having selected survey as the method of study, it is essential to know that the quality of the survey depends on:

1) The number of people one is able to obtain for the study.

2) Their typicalness in relation to the population from which they are selected.

3) The reliability of the data.

The quality of the present study will not be questionable because the Class XI adolescent population is easily obtainable, the selected sample will be typical of its population in all ways and the data will definitely be reliable as the researcher will herself collect the data.

It is essential to know the advantages and limitations of the survey method and see how it will be reflected in the present study.

Advantages:
1) Accumulation of information from individuals is possible at relatively low cost. The researcher was able to get the entire adolescent and teaching staff sample in the selected institutions. Psychologists/Educationists were contacted by mail. The information was thus readily available at low cost.

2) Generalizability to a larger population is more legitimate.

3) Unlike experimentation surveys are flexible. Data was collected with the use of a variety of data collection tools. Like the ABPO, ABPRS, ABPCL which have been discussed under tools in the present chapter.

4) Survey sensitize the researcher to potential problems that were originally unanticipated or unknown.

5) Surveys may be used as good tools for verifying theories.

Limitations of the survey method as seen by Galtung Johan (1969) attempt to overcome them are discussed below:

1) Surveys are superficial reflections of population sentiments and may be unstable reflection of population characteristic. To overcome this limitation of the survey method the researcher studied adolescent behaviour problems from three different dimensions i.e. perception of adolescents, teaching staff, educationists/psychologists.

2) The researcher has no control over individual response - control was not required in the present study as the individual's perception was needed.

3) Statements about population from which samples are obtained are tentative. It is well understood that any social study is a reflection of a society at a particular time - this study will also bring forth adolescent behaviour problems particular to a specific population during a specific period.

5) The individuals and the variables used to characterize them are picked for the specific purpose of a research but in the present study the sample is selected by a definite procedure. Therefore making it a repre-
sentative sample. The selected ten demographic variables have been purposively picked.

6) Problems of verbal Vs non-verbal, manifest Vs. latent data are not pronounced in this study as the data is collected from an educated sample.

The researcher has tried to overcome the limitations of the survey method but as Walizer M.H. and Weinir P.L. (1969) points out, certain disadvantages of the survey may have to be accepted as limitations of the study. They are as follows:

1) The survey method is too individualistic it treats the individual as a social unit.

2) It is too democratic- it may impose on the society an opinion structure with neither explanatory nor predictive functions and hence lead to a false image.

3) It is too static - it yields manifest verbal/ non-verbal reactions at one point in time - no swift changes can be detected.

4) It is restricted to a middle range of social position. The low strata and the elite or social center, are corners of the social structure, where the survey method may not be applicable, as many factors work against it.

5) The survey method works only across relatively narrow social distances - therefore the scarcity of good work done on social conflicts.

It may be concluded that the survey method inherently favours a society with a slow rate of change, little internal conflict, highly individualistic, inner directed and noble and with a high degree of correspondence between thought, word and deed. Even within such a society the survey is more applicable downwards than upwards. The present study is conducted in a society that reflects slow rate of change, little internal conflict, mobile and with a high degree of correspondence between thought, word and deed. Therefore it may be stated that the survey method is the most suitable method for the present study.
FLOW CHART OF THE RESEARCH

1. PRELIMINARY STAGE: ADOLESCENT BEHAVIOUR PROBLEMS
   - Interest
   - Through experience
   - Contact with the group

2. REVIEW OF:
   - Previous studies done by researcher.
   - Related literature

3. SELECTION OF VARIABLES
   - Academic Achievement
   - Demographic Variables

4. MAJOR OBJECTIVES
   1. To identify the most frequent Behaviour Problems prevalent in Adolescents (16-17 yrs).
   2. To explore the relation of Behaviour Problems of Adolescents with their Academic Achievement.
   3. To identify certain Demographic Variables associated with Adolescent Behaviour Problems.

5. HYPOTHESES
   1. Academic Achievement and the 2B Behaviour Problems in Adolescents are unrelated.
   2. The 2B Behaviour Problems in Adolescents are unrelated to the selected 10 Demographic Variables.
   3. The perception of the Teachers, educationists/Psychologists and Adolescents of the frequency of occurrence of the Behaviour Problems in Adolescents differ significantly.

6. DEFINITIONS OF:
   - Behaviour Problems
   - Adolescent
   - Demographic Variable
   - Academic Achievement

7. RESEARCH POPULATION
   - Adolescents (16-17 yrs)
   - Teaching staff (Junior college)
   - Educationists/Psychologists

8. PREPARATORY STUDY
   To draw up a sizable list of frequently occurring Adolescent Behaviour Problems for the study.

9. REFINEMENT OF TOOLS
   - Check List
   - Rating Scale
   - Questionnaire

10. TRY OUT STUDY

11. MAIN STUDY: RESEARCH SAMPLE
    - Institutions: 10
    - Adolescents: 500
    - Teaching staff: 150
    - Educationists/Psychologists: 20

12. GAIN PERMISSION
    From Principals of institutions Collect Academic Achievement.

13. UGC FUNDING
    For SOCIAL SCIENCE RESEARCH

14. COLLECT DATA

15. CODE ANSWERS

16. DATA REDUCTION

17. DATA ANALYSIS
   - Testing Hypotheses
   - Decision making
   - Accuracy

18. CONFIRMATORY STUDY

19. FINDINGS AND IMPLICATIONS

20. RESEARCH POPULATION
   - Adolescents (16-17 yrs)
   - Teaching staff (Junior college)
   - Educationists/Psychologists
Having fixed the method of study it is essential to proceed with the plan of the study.

2) FLOW CHART OF THE RESEARCH

The researcher came across a flow chart of survey diagram. (Walizer M.H. and Wienir P.L., 1978, p. 264) from which she has borrowed the basic idea of the diagram. With due acknowledgements, it has been modified slightly by adding or deliting events given in the original to provide a complete overview of the present study.

There is no set order of events that occur other than some common sense order of events - as indicated in the flow chart. Many parts of the work represented, go on at the same time or in mixed order. The flow chart is shown to form a circle, because the research process has no particular beginning or end it is a continuous process as further research is suggested areas reveals new dimensions of the problem.

The flow chart is seen to consist of 20 stages or steps. Stages 1 - 7 are the preliminary steps on which the entire research is based consisting of problem selection, review of related literature, selection of variables, defining major and minor objectives of the study, stating hypotheses and providing definitions.

The research plan was chiefly conducted in three stages namely
1. The preparatory stage and
2. The main study.
3. The confirmatory study.

The preparatory stage begins from stage 8 and continues till stage 11 involving drawing up a sizable list of behaviour problems, assembling tools, checking for reliability and validity gaining permission from Principals of institutions, conducting try out studies for each of the three self constructed tools.

2) The main study is indicated from stage 12 to 18 stage in the flow chart. It indicates the research population or sample, gaining funding for the
research from UGC, collection of data, collection of Class X Board Examination percentages, coding answers, data analysis, findings and conclusions and suggestions for further studies.

3) The confirmatory study is indicated as stage 19. It was undertaken to find out the result of time lapse on the nature and trend of the 28 behaviour problems.

The flow chart gives the overview of the entire research.

3) RESEARCH DESIGN

The present study was conducted in three main stages namely-

A) Preparatory stage
B) Main Study.
C) Confirmatory study.

A) PREPARATORY STAGE:

The preparatory stage was carried out as a preliminary setting for carrying out the main study. The aims of the preparatory stage were two fold, namely-

A.1. Selection of Behaviour problems, defining the meaning of each in reference to this study.

A.2 Discussion of tool for identifying the selected behaviour problems. Other tools felt necessary for added data were also prepared.

A.1 Selection of Behaviour problems

a) Exhaustive list of Behaviour problems

b) Reduced list by Systematic process

A.1 (a) Exhaustive list of behaviour problems
The first task in the preparatory stage was to compile an exhaustive list of behaviour problems, faced by adolescents. This was accomplished by referring to various sources, namely: related literature, previous studies done by the researcher and other researchers, journals, text books, reports, check lists and inventories and discussions with experts. In this way a list of 165 behaviour problems was identified.

Studying 165 adolescent behaviour problems would be a gigantic, non exhaustive study. In consultation with experts and the guide it was decided to reduce the number of behaviour problems to a sizable number because of the following reasons.

i) The exhaustive list of 165 Behaviour problems may not be applicable to the present population under study.

ii) 165 behaviour problems is too large a number to be studied, it is therefore not feasible.

iii) All the 165 behaviour problems may not be present in the adolescents in their severity, some may be totally absent.

Considering the above three reasons it was resolved to methodically reduce the number of behaviour problems for the study by a systematic process.

A.1(b) Reduced list by systematic process.

In order to carry out this activity, opinions of three sets of population - directly or indirectly related to the adolescents were identified namely -

1. Adolescent students of class XI.

2. Teaching staff of Class XI

3. Educationists/Psychologists

i) Sample - Selection of three samples from the above three populations:
Adolescents - A probability simple random selection of ten adolescents from ten different institutions (five Higher Secondary schools and five Junior Colleges) constituted a sample of 100 adolescents.

Teaching Staff - A simple random selection of five teaching staff members teaching Class XI from the above ten institutions constituted a sample of fifty teachers.

Educationists/Psychologists - Twenty Educationists/Psychologists were purposively selected. Heads of Departments of Education and Psychology of Universities where the researcher had previous associations (Appendix B) were contacted and they formed the sample.

ii) Tool The Preliminary Check list (PCL)
The researcher developed a check list comprising of the 165 behaviour problems (Appendix-C). The selected sample were asked to give rank orders to only those problems they considered revalent in the Class XI adolescents of Kolhapur City according to their severity. All problems need not be ranked.

Administration of check list - The researcher herself administered the PCL to the sample of students and teachers. These were completed and received back immediately. The twenty Educationists/Psychologists were mailed. The check lists containing self addressed envelops for prompt reply. Only eleven PCLs were received back completed. These formed a small but reliable sample.

iii) Compiling the lists - The three sets of rank orders by adolescents, Teaching staff and Educationists/Psychologists were compiled for all the 165 behaviour problems. It was rearranged in descending rank scores. Smaller the rank, severe the behaviour problem.

The final list consisted of twenty eight behaviour problems. 137 remaining problems were scored to a negligible extent - indicating practically their non existance. These have not been included in the present study but could be taken up for further research.
The results of the PCL indicated the twenty eight most commonly occurring and prevailing adolescent behaviour problems. These were selected for the study Appendix D gives the list.

It was essential to give the definite meaning and scope of each behaviour problem. Clarifications of each of the twenty eight Behaviour problems as indicated in the present study follows:

1) **Stealing** - Stealing notes, library books or pages, other's property etc.

2) **Cheating** - Copying during examination or work given in class.

3) **Absconding classes** - Missing classes to see movies or visit restaurants etc.

4) **Overtalkativeness** - Talking to other students or whispering during class time.

5) **Overfashion consciousness** - Dressing up in very modern, latest clothes, using heavy make-up, behaving very modern.

6) **Irresponsibility** - Not doing or completing given studies or work.

7) **Lying** - Being untruthful, making up false stories to cover up mistakes etc.

8) **Loose-in-Tongue** - Use of slangs, swearing often while talking.

9) **Teasing** - Calling names, whistling at girls, throwing small articles paper arrows etc.

10) **Reading cheap literature** - Reading cheap vulgar books, magazines on sex, sexy films and film people, politicians etc.

11) **Being Temperamental** - Bursting into tears on least provocation, being quick tempered, throwing tautrums etc.

12) **Stubbornness** - Not listening to others - doing just how and what he/she likes, not speaking on being coaxed etc.
13) **Smoking** - Smoking cigarettes, bidies within or out of class room premises.

14) **Jealousy** - Envious about other classmates studies dress, possessions etc.

15) **Day dreaming** - Building castles in the air, being lost in ones thoughts during class time.

16) **Disobedience** - Over looking college/school rules.

17) **Gangstering aimlessly** - Roaming around aimlessly with friends during class time.

18) **Refuting Parental Supervision** - Disapproving parents views in studies, dressing, choice of friends, timings etc.

19) **Interest in the opposite sex** - Showing more keenness to mix and be popular with classmates of the opposite sex.

20) **Feeling of insecurity** - Apprehensive, nail biting, unnecessary hand movements, fidgetting.

21) **Non Participation in extra-curricular activities** - Not taking part in games, dramatics, elocution, competitions, gatherings, NCC, NSS etc.

22) **Forgetting** - To put out of mind any given activity, home work, task responsibility.

23) **Challenging** - To defy, dispute the teacher in class, or classmates within the class.

24) **Shyness** - Timid, coy-avoiding being seen, avoiding mixing with classmates avoiding answering questions in class.

25) **Clumsiness** - being awkward, tactless.

26) **Seclusiveness** - Being secluded, avoiding the company of classmates, disliking to mix with the group etc.
27) Editing or chewing in the class - Eating tiffin, sweets, chewing gum during the class.

28) Sexual perversion - Misusing sex or having bad sex habits.

Having derived at a sizable list of the twenty eight behaviour problems to be taken up for the present study and having defined the meanings of each in reference to this study, we step into the major part of the preparatory stage, namely tools.

A.2. Tools - Discussion

After systematically selecting a sizeable list of behaviour problems for the study, the next step was to choose appropriate tools for the collection of data. Taking into consideration various factors such as the objectives of the study, non-availability of tests, competence of the investigator to administer, score and interpret the results.

The following tools were prepared and used:

i) The main Tool -
1. The Adolescent Behaviour Problem Questionnaire ABPQ.

ii) Other Tools -
2. The Adolescent Behaviour Problem Rating Scale ABPRS.
3. The Adolescent Behaviour Problem Check List ABPCL.
4. Academic Achievement Check List AACL.

Tools used will be discussed as below:

i) Main Tool: ABPQ
   a) Text of the main tool
   b) Try out
   c) Standardization

ii) Other tools:
The present study aims at identifying behaviour problems in class XI adolescents (16-17 years olds) - that are most prevalent and then studying them in relation to the selected demographic variables and academic achievement.

Search for readymade tools proved futile - the researcher was, therefore, required to design a tool to cover all the required facets, try out the tool and standardize it.

Parallel and identical tools were studied thoroughly such as the Adolescent Girls Problem Inventory (AGPI), Badami's Problem Inventory, Mooney's Check List and other attitude and interest inventories. Of all the tools studied Dr. M.N. Palsanes (Poona University) Samayojan Prashnavali in Marathi consisting of 375 direct statements at the first person level was found to be a good guide line in the nature and construction of statements. This tool was named by the researcher as 'The Adolescent Behaviour Problem Questionnaire' or ABPQ. The ABPQ was constructed in Marathi, as Marathi was found to be the language universally followed by the population under study.

PURPOSE OF THE ABPQ:

The ABPQ was constructed for two reasons (i) to collect demographic data of each adolescent - limited to the ten demographic variables selected for the study, ii) to identify behaviour problems prevalent in the adolescents of the selected population.
Keeping in mind the above requirements the ABPQ consists of special form to be filled in by adolescents regarding their demographic factual data and a list of seventy statements at the first person level.

Each of the selected twenty eight behaviour problems were reflected in their positive/negative, favourable/unfavourable forms in two or more statements each.

The researcher resorted to the use of catch statements - unrelated to the twenty eight problems. These were used to develop confidence and build rapport for projecting adolescents true behaviour while answering the ABPQ. Details of the ABPQ construction, administration scoring and analysis will be dealt with in a later part of this chapter. Copy of the ABPQ is attached as Appendix E.

A try out of the ABPQ was considered essential, it being a self-constructed tool.

b) TRY OUT STUDY

A try out study of the ABPQ was undertaken on a small simple random sample of fifty adolescents - five randomly selected from each of the ten institutions. This try out was conducted to find out if -

1. The directions given in the ABPQ were clearly understood by the adolescents and that there was no source of confusion and ambiguity in the instructions.

2. The language was easily understood and wording of the statements were clear.

3. The arrangements and presentation of statements required any technical changes.

4. The statements kept up the adolescents interest and desire to answer all seventy statements or there was reason for boredom.
5. The statements elicited correct response by meaning the same thing to the subject as they did to the researcher.

6. The time required for completion of the ABPQ was within limits (30-45 minutes).

The researcher herself administered the ABPQ collected opinions on the above points from students through informal interview. The ABPQ was found to have withstood the above test. Adolescents could answer it without any problems. Instructions were clear, wordings easily understood and could be completed by all within the time limits.

The ABPQ was found to be adequate and its final version was ready for standardisation.

C) ESTABLISHING STABILITY OF THE ABPQ -

Reliability and Validity - The main characteristic of a measuring instrument are its reliability or consistency and validity.

The results of the following tests established the stability of the ABPQ.

<table>
<thead>
<tr>
<th>RELIABILITY:</th>
<th>Nature of sample</th>
<th>Number of sample</th>
<th>Reliability coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Test-retest reliability</td>
<td>Problematic adolescents</td>
<td>15</td>
<td>.97</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non-problematic adolescents</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Randam sample</td>
<td>30</td>
<td>.93</td>
</tr>
<tr>
<td>2) Split half reliability</td>
<td>Random sample</td>
<td>50</td>
<td>.92</td>
</tr>
</tbody>
</table>
VALIDITY:

1) Content validity - Expert opinions of Educationists Psychologist and statistician

2) Predictive validity - Adolescent random sample 30 .84

Decision making - Teaching Staff 1 accuracy.

Although no minimum level of reliability can be established to fit all occasions. In making individual decisions, Devis specified that reliability coefficients below .75 were inefficient. Nunnally concurred with this level as a minimum, yet stated that in such cases where important decisions must be made about humans on the basis of test scores, even a reliability of .90 is not high enough. (Upasani, N.K., 1987, p.110). Referring to the foregoing discussion the test coefficients of the ABPQ indicate that it is a reliable and valid tool, placing confidence in its use.

Details about the procedure analysis and interpretation of the tests of reliability and validity of the ABPQ are given under 'tools used' part of the main study of the same chapter.

ii) OTHER TOOLS:

In addition to the ABPQ the other tools used in the present study are:

a) Adolescent Behaviour Problems Rating Scale (ABPRS).

b) Adolescent Behaviour Problems Check List (ABPCL).
c) AACL

a) The ABPRS -

The ABPRS was required to find out the perception of teaching staff on adolescent behaviour problems. The ABPRS was constructed by the researcher for the teaching staff. It consisted of a preliminary section for collecting factual information required for analysis. (Appendix F).

List of twenty eight behaviour problems was given with a five point scale. The teachers were asked to rate each behaviour problem according to its seriousness in occurrence, in the adolescents under study as they perceived it.

Try Out - Tryout of the ABPRS was undertaken on a simple random sample of five teachers from each of the ten selected institutions i.e. fifty teachers. The tool was found to be well understood and consistent.

b) The ABPCL -

In order to form a tripolar approach to the study of Adolescent Behaviour problems, it was considered essential to consult Educationists/Psychologists, who know the adolescent from a theoretical angle.

The ABPCL (Appendix G) was mailed to twenty eminent Educationists/psychologists.

c) Academic Achievement Check List (AACL) - Collection of adolescent aggregate percentage in the Class X Board Examination has been treated as a standardized measure of adolescents Academic Achievement in this study. Justification of the same has been undertaken under the main study.

B) THE MAIN STUDY

The main study was designed to find out the relationship between the two independent variables namely - Behaviour problems and selected Demographic variables, and the dependent variable - Academic Achievement. This being the main objective it was essential to carry out the following procedure
1. Sample selection - Sampling procedure

2. Tools - Construction, standardization and scoring.

1. Sample Selection -

The selection of an adequate sample from the universe is an essential and important step in the conduct of the research. Since it is difficult to make a study on the whole population, it seemed convenient to select a sample from the population with the application and use of appropriate measures.

The selection of an appropriate sample chiefly depends upon the aim and needs of the study. Other factors to be kept in mind are (i) money available for the research (ii) Limitations of time for the research (iii) size and knowledge of the population (iv) availability of adequate tools (iv) importance of generalizationality for the whole universe or for a particular population. The proper sampling enhances the quality of dependability of the obtained results.

Random sampling is considered to be the best due to the fact that each element of the population has an equal chance of being selected, and their remains no bias in selection of the elements of the population. The results based on such type of sampling can therefore be said to be valid for the whole population.

When population is quite large and composed of different strata, selection of multi-stage random sampling reflects all important segments of the population to one degree or another.

The researcher has followed Fox D. (1969) sampling procedure. It will therefore be imperative to first study the process employed and then define the sample through this systematic process.
The following three sets of samples have been selected for the study:

<table>
<thead>
<tr>
<th>Sample</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Adolescents</td>
<td>500</td>
</tr>
<tr>
<td>b) Teaching Staff</td>
<td>150</td>
</tr>
<tr>
<td>c) Educationists/Psychologists</td>
<td>20</td>
</tr>
</tbody>
</table>

Each of the sample selection procedure is given below:

Sample procedure:

Fox D.J. (1969, pp. 319-322) gives the procedure for selecting sample for educational research. According to him there are five steps in sampling process and there corresponding five levels of samples viz.

- (a) Universe
- (b) Population
- (c) The invited sample
- (d) Accepting sample
- (e) Data producing sample

a) Universe -

Universe includes all possible respondents of a certain kind.

b) Population -

It is that portion of universe to which a research has access.

c) The invited sample -

It is defined as all elements of the population to which an invitation to participate in research is extended.

d) The Accepting Sample -

It is that portion of invited sample that accepts the invitation and agrees to participate.

e) The data producing sample -

It is defined as that portion of the accepting sample that actually produces data.
The five steps of selecting sample are as follows:

1. Identification of the universe.

2. Identification of population to which researcher has access.

3. Deciding size of the sample and selecting representative sample.

4. Inviting the sample and extending invitation until sufficient number accept invitation, so that the sample size is of desired size.

5. Applying the treatment and data gathering techniques finally for data production. All or most of the accepting respondents generally produce the required data.

The findings and generalization of the study based on data producing samples can be applicable and generalizable for whole of the universe or atleast to those populations in the universe which are similar in nature to that population, from which the sample was drawn. This is depicted in sampling cycle given in the following figure:

So far as the generalization of the findings of the study of the universe is concerned, the representativeness is the recurring concern throughout the
sampling process. Therefore, in sampling process the second step in particular and ensuring representativeness at all stages, in general, is of utmost importance.

The second step relates to the decision of size of sample and its representativeness.

The size of the sample becomes important issue because it varies universally as the standard error (SE). The relationship can be stated as, larger the N (size of the sample) smaller the SE, more the dependability of M (Mean) and O (SD) (Garrett, H. E., 1979). There are very few concrete suggestions regarding the size of sample. Statistically all sample above N = 30 are treated as large samples (ibid, p. 186). According to Roscoe, J. T. (1975, p. 184) 8-10 percent sample is adequate, problem of feasibility also needs consideration in deciding the size of sample. The guideline provided by Fox D. J. (1969, p. 346) is more valuable. He says that the sample size is far less important than sample representativeness.

The most trustworthy way of securing representativeness is to make sure that the sampling is random (Garrett, H. E. 1979, p. 203). If the population is clearly defined then it is easier to get random sample from the population.

Garrett H. E. (1979, p. 208) further says that the larger the N, the larger the SD of sample and more inclusive and (presumably) representative the sample becomes of general population.

If N is 50 or around fifty than only 0.5 percent cases from both the extremities of the normally distributed population be outside the range of the sample. It means that it represents 99 percent cases from the population. Incase of the population consisting of N is around 200 only are individual from too extremities may not be represented by sample with N = 50 or so.

On the basis of the foregoing discussion the sampling process for the field study was planned on the following samples:

a) Adolescent

b) Teaching staff
c) Educationists/Psychologists

a) Adolescents -

Universe - The universe of the present study is defined as the institutions, which adolescents of Class XI study with the physical boundaries of the city of Kolhapur in Maharashtra. These institutions are of two types namely Higher Secondary Schools and Junior Colleges in the City of Kolhapur. This bifurcation was taken into consideration while selecting the sample of institution. The four stages in the selection of adolescent sample are as follows:

1st Stage - Selection of Institutions:

A list of Higher Secondary Schools and Junior Colleges in Kolhapur was obtained from the Maharashtra State Board of Examination, Shivaji Park, Kolhapur (Appendix H). Below is given the list of the ten institutions selected by the two stage random method. The first stage referring to all the institutions in Kolhapur with the +2 stage. The second stage refers to bifurcating Junior Colleges from Higher Secondary Schools and then using the simple random method to select, five institutions from each group, given below is the list of the selected institutions.

<table>
<thead>
<tr>
<th>Selected Institutions Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+2) Class XI with School</td>
</tr>
<tr>
<td>2. S.M. Lohiya Junior College</td>
</tr>
<tr>
<td>3. Jijamata Girls Junior College</td>
</tr>
</tbody>
</table>
It is assumed by the researcher that the selected ten institutions represent the following aspects:

a) Faculty of Study - Arts, Science, Commerce.

b) Medium of Instruction - English, Marathi.

c) Type of Education - Co-education, single, sex education.

d) Type of institution - Class XI attached to College (Junior College) and Class X attached to school (Higher Secondary School)

e) Institutions run by Government and private or aided institutions.

f) These institutions cater to students from all socio-economic strata of the society.

2nd Stage Population:

The population of the study may be defined as the students of Class XI studying in the selected ten institutions - 50 percent representing +2 or Class XI of Higher Secondary Schools and 50 percent sample representing the Junior College adolescents. The students who constitute the population have some common features.

1. They are attending Higher Secondary Schools or Junior Colleges institutions in Kolhapur City representing all strata of society.

2. They are all in the age group 16-17 years.

3. They are studying in Class XI with English or Marathi as the medium of instruction.

4. They represent the Arts, Science or Commerce streams.

5. They study in single sex or co-education institutions.
The size of the sample was decided in the following way. In 1986, 9631 students appeared for the Class X Secondary Board Examination from Kolhapur City. Percentage of passed students was 43% which means 4,141 students passed the examinations approximately. 1/8th of the passed population forms the sample of this study which according to Fox D.J. is an adequately representative sample.

3rd Stage - The invited sample:

With the help of records maintained in the institutions lists of all Class XI students was collected. Each of the ten selected institutions was represented by fifty adolescents, selected by the simple random method from the list of names of Class XI students, made available by the institutions. These 500 adolescents formed the invited sample. Criteria of medium of instruction, faculty of study or type of education was not applied for the selection.

4th Stage - Data Producing Stage:

During the field study, there was a loss of seventy eight adolescents. This loss was due to incompletely filled questionnaires and age disparity. The data producing sample for the study was 422 adolescents (16-17 years).

The profile and general information of the adolescent sample follows:

The Profile and General Information about Adolescent Sample:

The following is the profile and general information of the sample under study. It is essential to study the profile as the analysis will be based on each of the following aspects:

i) Academic Achievement

ii) Sex

iii) Faculty of study

iv) Medium of Instruction
v) Type of institution
vi) Type of education
vii) Father's and mother's occupation
viii) Father's income
ix) Father's and mother's education
x) Type of family
xi) Number and ages of siblings.

i) Academic Achievement -

The high, medium and low category percentages were calculated from the achievement of the concerned sample. The Quartile 1 marked the upper limit of the 'low' category and Quartile 3 marked the lower limit of the high category thereby those falling in between these 2 limits fell into the medium category.

Table 3.1 showing the classification of adolescents on academic achievement follows overleaf.
From table No.3.1 it is seen that 23 percent adolescents are high achievers, 52.6 percent are medium achievers and 24.4 percent are low achievers. The sampling distribution indicates a normal distribution. Appendix I gives the calculation of the three categories - High, Medium and Low academic achievers.

From table No. 3.2 it is seen that the sample consists of a greater number of male adolescent 56.40 percent, than females which are 43.60 percent.
iii) Faculty of Study:

TABLE 3.3
CLASSIFICATION OF ADOLESCENTS ON FACULTY OF STUDY

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Number of adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arts</td>
<td>83 (19.67)</td>
</tr>
<tr>
<td>Science</td>
<td>191 (45.26)</td>
</tr>
<tr>
<td>Commerce</td>
<td>148 (35.07)</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>422</strong></td>
</tr>
</tbody>
</table>

It is seen that out of the sample of 422 students 45.26 percent are from Science faculty, 35.07 percent from the Commerce faculty and the least that is 19.67 percent are from the Arts faculty.

iv) Medium of Instruction:

Hindi is not a popular medium of instruction in Kolhapur. All Science students have English medium, commerce is taught both through English and Marathi medium.

TABLE 3.4
CLASSIFICATION OF ADOLESCENTS ON MEDIUM OF INSTRUCTION

<table>
<thead>
<tr>
<th>Medium</th>
<th>Number of adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>225 (53.32)</td>
</tr>
<tr>
<td>Marathi</td>
<td>197 (46.68)</td>
</tr>
<tr>
<td>Hindi</td>
<td>00 (00.00)</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>422</strong></td>
</tr>
</tbody>
</table>

From table No. 3.4 it is seen that 53.32 percent have opted for English, 46.68 percent have Marathi as their medium of instruction, whereas none of them have opted for Hindi as the medium of instruction.
v) Type of Institution:

In Kolhapur, Junior College, that is Class XI and Class XII, are in the school itself or attached to College. These 2 crucial years in the adolescents' life may show different tendencies in their behaviour under the two different situations:

1) When attached to the school, Class XI is a senior class governed by school regulations, discipline restrictions and responsibilities.

2) When attached to the college it is the junior most class. The atmosphere in comparison to the school is chiefly free, independent with less responsibility, less restrictions and exposure to a mixed group, influenced by senior college students.

The researcher has, therefore, categorised the adolescents under study into the two groups under institutions with school and with college chiefly to study adolescent behaviour in two different atmospheres.

<table>
<thead>
<tr>
<th>TYPE +2 STAGE WITH</th>
<th>NUMBER OF ADOLESCENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>149 (45.31)</td>
</tr>
<tr>
<td>College</td>
<td>374 (64.69)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>422</strong></td>
</tr>
</tbody>
</table>

From table No. 3.5 it is seen that 45.31 percent of adolescents are from Class XI with school and the majority 64.7 percent are in college.
vi) Type of education:

In Kolhapur there are single sex institutions for females, but co-educational institutions are found to be more popular.

<table>
<thead>
<tr>
<th>Type of Educational Institutions</th>
<th>Number of Adolescents attending</th>
</tr>
</thead>
<tbody>
<tr>
<td>For females only</td>
<td>121 (28.67)</td>
</tr>
<tr>
<td>Co-educational</td>
<td>301 (71.33)</td>
</tr>
<tr>
<td>Total</td>
<td>422</td>
</tr>
</tbody>
</table>

From table No. 3.6 it is clearly seen that majority of the adolescents 71.33 percent attend co-educational institutions. 121 females attend institutions purely catering for females only. It indicates that at the age of 16-17 years co-education is preferred whereas purely single sex institutions are not that popular.

vii) Occupation:

a) Father

<table>
<thead>
<tr>
<th>Occupations</th>
<th>No. of adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional</td>
<td>85 (20.14)</td>
</tr>
<tr>
<td>Businessmen</td>
<td>62 (14.69)</td>
</tr>
<tr>
<td>Farmers</td>
<td>132 (31.28)</td>
</tr>
<tr>
<td>Government employee</td>
<td>143 (33.89)</td>
</tr>
<tr>
<td>Total</td>
<td>422</td>
</tr>
</tbody>
</table>
It is seen in table No. 3.7 that 33.89 percent of the concerned adolescents' fathers are government employees, 31.28 percent are farmers, 20.14 percent are professionals like doctors, engineers, ayurvedic doctors, lawyers, architects, teachers, etc. and only 14.69 percent are businessmen.

vii) Occupation:

b) Mother

<table>
<thead>
<tr>
<th>TABLE 3.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLASSIFICATION OF ADOLESCENTS ON MOTHER'S OCCUPATION</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Housewife</th>
<th>Teaching</th>
<th>Working - 54</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Pre-Primary</td>
<td>Primary</td>
</tr>
<tr>
<td>Number</td>
<td>368</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>Percentage</td>
<td>87.10</td>
<td>2.10</td>
<td>4.00</td>
</tr>
</tbody>
</table>

Table No. 3.8 shows 87 percent of the mothers of adolescents under study are housewives which is a very large percentage. Only 12.90 percent mothers are working wives; 8.44 percent are in the teaching profession teaching at pre-primary, primary and secondary level or are principals of institutions. None are teachers at college level. 1.75 percent are nurses and 0.23 percent are doctors, .23 percent are press workers, .50 percent are clerks and 1.75 percent are labourers.

It is evident that 87 percent of adolescents under study have housewives as mothers and only 12.90 percent face problems of mothers working therby getting limited time in the house.
viii) Father's Income -

After considering the complete samples of fathers' income, three convenient categories were made. The income indicated here includes income from all sources i.e. pay packet, interest from savings, property, dividends, etc.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Monthly income</th>
<th>Number of Adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>HIGH Above Rs. 2,500/- per month</td>
<td>155 36.78</td>
</tr>
<tr>
<td>2</td>
<td>MEDIUM Between Rs. 1,000/- to Rs. 2,500/- per month</td>
<td>177 41.94</td>
</tr>
<tr>
<td>3</td>
<td>LOW Below Rs. 1,000/- per month</td>
<td>90 21.33</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td></td>
<td><strong>422 100.00</strong></td>
</tr>
</tbody>
</table>

In the high category (Rs. 2,500/- and above) there are 155 adolescents forming 36.73 percent in the middle category which forms the majority - there are 177 adolescents i.e. 41.94 percent and in the low income category there are 90 adolescents i.e. 21.33 percent.

From table 3.9 it is evident that the 'low income category' is the smallest group - the reasons for this may be attributed to inability of meeting college educations' financial demands or dropping out from college/school to supplement the family income.
ix) Father's Education:

It is seen in table No. 3.10 that only 6 percent fathers of adolescents under study are uneducated whereas 94 percent are educated at different levels. A detailed study of the father's levels of education indicates that 21 percent are educated upto Class IX, 25 percent of them are educated till the S.S.C. level (Class X) and 23 percent are graduates. 6.2 percent have education degrees/diplomas (D.Ed., B.Ed., M.A, B.Ed., M.Ed.) 9 percent parents are professional like Doctors, Engineers, Lawyers.

In general it can be said that the education level of the fathers' of adolescents under study is not very satisfactory.

ix) Mother's Education:

| Table 3.11 |

**CLASSIFICATION OF ADOLESCENTS ON MOTHER'S EDUCATION**

<table>
<thead>
<tr>
<th>Uneducated</th>
<th>Educated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>121</td>
</tr>
<tr>
<td>Percentage</td>
<td>29</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>121</th>
<th>108</th>
<th>118</th>
<th>32</th>
<th>6</th>
<th>6</th>
<th>11</th>
<th>1</th>
<th>1</th>
<th>422</th>
</tr>
</thead>
<tbody>
<tr>
<td>S.S.C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H.S.C.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class X</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class XI</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class XII</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduate</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post-grad</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.Ed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B.Ed.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Doctors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In general it can be said that the education level of the mothers of adolescents under study is also not very satisfactory.
As seen in Table No. 3.11, 29 percent of the mothers of adolescents under study are uneducated whereas the remaining 71 percent are educated at different educational levels. Whereas only 6 percent fathers are uneducated, 29 percent mothers are uneducated which is a large percentage. 26 percent are educated below Class IX, 28 percent are S.S.C., 7 percent are graduates only 1 percent is post-graduates, 4 percent have education degree/diploma (D.Ed., B.Ed.) and only 0.25 percent are professionals - doctors.

x) Type of family

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Family Type</th>
<th>Number of adolescents</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Joint family</td>
<td>226 53.56</td>
</tr>
<tr>
<td>2.</td>
<td>Nuclear family</td>
<td>196 46.44</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>422 100.00</td>
</tr>
</tbody>
</table>

From Table No. 3.12 it is seen that the majority of adolescents under study come from joint families-226, i.e. 53.56 percent whereas 196 i.e. 46.44 percent come from nuclear families. This indicates that in Kolhapur joint family system is predominantly existant.

xi) Number and ages of siblings:

The researcher found it convenient to combine number and ages of the adolescents siblings into four categories, namely (1) having all siblings above 17 years or all of them older than the adolescent under study, (2) all below 15 years where the adolescent will be the oldest (3) with equal number of siblings above and below him for example one sibling older and one younger. In this category the number varies from 1 sibling older and 1 younger to 4 siblings older
and 4 younger. There are no adolescents having more than 4 siblings older and 4 younger. (4) Only child indicates the adolescent under study being the only offspring of his parents.

**TABLE 3.13**

CLASSIFICATION OF ADOLESCENTS ON NUMBER AND AGES OF SIBLINGS

<table>
<thead>
<tr>
<th>Sr.No.</th>
<th>Total number of siblings</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>All siblings above 17 years</td>
<td>153</td>
<td>36.00</td>
</tr>
<tr>
<td>2.</td>
<td>All siblings below 15 years</td>
<td>167</td>
<td>39.50</td>
</tr>
<tr>
<td>3.</td>
<td>Equal number of siblings</td>
<td>89</td>
<td>22.00</td>
</tr>
<tr>
<td></td>
<td>(Above and below him/her)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>An only child</td>
<td>13</td>
<td>2.50</td>
</tr>
</tbody>
</table>

Total: 422 100.00

In table No. 3.13 it is seen that 36 percent adolescents have all siblings above 17 years, which indicates the adolescent to be the youngest. 39.50 percent of the adolescents are the oldest children in their families. 22 percent have equal number of siblings older and younger to them and only 2.50 percent are the only offsprings of their parents with no siblings.

**SAMPLE - Teaching Staff -**

Keeping in mind the sampling procedure as advocated by Fox D.J. (1969) the universe of the present sample is defined as the selected ten institutions where Class XI adolescents study. These may be either Higher secondary schools or Junior Colleges of Kolhapur.

**Population -**

Sample for the present study are the teaching staff, teaching class XI students irrespective of their sex, type of institution, teaching experience, faculty or medium of instruction.

**The invited sample -**

Is defined as the 150 randomly selected, fifteen teaching staff from each of the selected institutions.
The Accepting sample - The ABPRS was administered to 150 teaching staff - only 114 formed the accepting sample who dutifully returned the ABPRS.

The data Producing Sample - The researcher received back 114 ABPRS on checking it was found that only 104 ABRS formed the data producing sample.

The profile and general composition of the teaching staff is given below under following five variables:

1. Sexwise composition
2. Institutionwise composition
3. Teaching Experiencewise composition
4. Facultywise composition
5. Medium of instructionwise composition

1. Sex-wise:

```
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Sex</th>
<th>Number of teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Male</td>
<td>76</td>
</tr>
<tr>
<td>2.</td>
<td>Female</td>
<td>28</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>104</td>
</tr>
</tbody>
</table>
```

2. Institution-wise:

```
<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Type of Institution</th>
<th>Number of teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>+2 stage with College</td>
<td>66</td>
</tr>
<tr>
<td>2.</td>
<td>+2 stage with School</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>104</td>
</tr>
</tbody>
</table>
```
3. Teaching Experience-wise:

**TABLE 3.16**
TEACHING EXPERIENCEWISE COMPOSITION OF TEACHING STAFF

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Teaching experience</th>
<th>Number of teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>1-10 years</td>
<td>82</td>
</tr>
<tr>
<td>2.</td>
<td>11 years and above</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td><strong>Total:</strong></td>
<td><strong>104</strong></td>
</tr>
</tbody>
</table>

4. Faculty Of Study-wise:

**TABLE 3.17**
FACULTYWISE COMPOSITION OF TEACHING STAFF

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Faculty of Study</th>
<th>Number of teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Arts</td>
<td>36</td>
</tr>
<tr>
<td>2.</td>
<td>Science</td>
<td>24</td>
</tr>
<tr>
<td>3.</td>
<td>Commerce</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td><strong>Total:</strong></td>
<td><strong>104</strong></td>
</tr>
</tbody>
</table>

5. Medium Of Instruction-wise:

**TABLE 3.18**
MEDIUM OF INSTRUCTIONWISE COMPOSITION OF TEACHING STAFF

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Medium of Instruction</th>
<th>Number of teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>English</td>
<td>63</td>
</tr>
<tr>
<td>2.</td>
<td>Marathi</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td><strong>Total:</strong></td>
<td><strong>104</strong></td>
</tr>
</tbody>
</table>
SAMPLE:

Educationist/Psychologists

The Heads of the Departments of Psychology and Education of leading Universities, where the researcher had previous associations during the course of the last fifteen years formed the third sample. The ABPCL was mailed to twenty purposively selected Heads (Appendix-B). The data producing sample consisted of eleven ABPCL.

2) Tools:

Having selected and studied the sample for the study it is essential to study the tools used in the present research.

1. The Adolescent Behaviour Problem Questionnaire - ABPQ.
2. The Adolescent Behaviour Problem Rating Scale - ABPRS.
3. The Adolescent Behaviour Problem Check List - ABPCL.
4. Academic Achievement Check list - AACL.

As mentioned earlier readymade tools were not available for collecting the type of data required for this study. The researcher constructed the necessary tools. A discussion of each of the above tools - their construction, standardisation and scoring procedures, will be discussed below.

Tool No. 1: Adolescent Behaviour Problems Questionnaire

(ABPQ)

There are many devices to inquire into the causes of a particular kind of behaviour. Some of these devices are inventories, interviews, life history, etc. But the most commonly used of all, is the questionnaire, which has been employed successfully in the present study.
A questionnaire contains definite, concrete and preordinated questions, with additional questions limited to those necessary to classify inadequate answers or to elicit a more detailed response.

Special points to be considered in respect of the questionnaire are size, appearance, clarity, sequence of questions and its ability of catching interest of those answering it. Reliability and validity of the questionnaire are affected by ambiguous questions, biased sample and selectivity of responses.

Several standardised self inventories and adjustment tests were consulted before it was felt that a realistic picture of adolescents personality, appraisal and existent behaviour problems could be best got through a questionnaire based on the projective technique which has received a great deal of attention in the past 40 years for evaluating behaviour. (Best John, 1977, p. 188).

A projective instrument enables a subject to project his internal feelings, attitudes, needs, values or wishes to an external object. The subject may unconsciously reveal himself as he reacts to the external object. The use of projective devices is particularly helpful in countering the tendency of a subject to try and appear to be on his best to respond as he believes he is expected to respond.

The ABPQ is studied as follows:

1) Construction
   i) Preliminary section,
   ii) Main body.

2) Standardization
   i) Reliability.
   ii) Validity.

3) Method of Data Collection

4) Scoring of the ABPQ.
The ABPQ was constructed by the researcher in Marathi as majority of the present population was found to be fluent in Marathi. The ABPQ can be conveniently studied in two parts (i) preliminary section (ii) Main body.

Preliminary Section:

The ABPQ (Appendix E) was preceded by a brief note of confidence to the adolescents. Clear and easy instructions were given regarding the process of answering the questionnaire.

This was followed by factual information essential for analysis on the selected ten demographic variables. The following information was elicited:

1. Name
2. Sex
3. Name of institution
4. Faculty of study
5. Medium of instruction
6. Percentage of Class X Board Examination marks (Total aggregate of all subjects)
7. Occupation of father/mother
8. Income of father
9. Education of father/mother
10. Age and number of siblings
11. Type of family.

ii) The Main Body

The ABPQ consists of statements. The nature of the statements was adopted from Dr. M.N. Palsasane's "Samayojan Prashnavali" (Pune University) constructed in Marathi. (Adjustment Inventory)
The ABPQ consists of seventy statements. Each of the twenty-eight behaviour problems is reflected in their positive or negative form with the help of two or more favourable or unfavourable statements at the first person level. Twenty behaviour problems have two statements each. The remaining six behaviour problems could not be reflected as desired in only two statements, therefore, behaviour problems No. 3, 5, 10, 11, 21, 27 and 28 were brought out in three, four or five statements.

Table No. 3.19 gives the details of the numbers of statements in the ABPQ, corresponding to the behaviour problems, the expected answers (indicating presence of the behaviour problem), score allotment and the nature of each statement.

The statements at the first person level are in the positive or negative form - these statements are favourable or unfavourable. Thus each statement is positively or negatively favourable or positively or negatively unfavourable. A favourable statement predicts non-existence of the problem it being a positive or negative declarative statement. An unfavourable statement is indicative of the presence of behaviour problem it may be a positive or negative declarative statement.

The researcher employed the use of eight catch statements numbers 12, 15, 65, 66, 67, 68 and 69. They are unrelated to the twenty-eight Behaviour problems. They have been used in the study to avoid error in answering the remaining statements correctly due to expectation and accommodation. It is felt that these catch statements would develop confidence and build rapport in projecting the adolescents' true behaviour while answering the ABPQ. Jargoon or embarrassing statements were projected in a simple straightforward way prestige bias or social acceptance were not considered.
<table>
<thead>
<tr>
<th>Behaviour Problem</th>
<th>Statement No.</th>
<th>Expected answer</th>
<th>Score</th>
<th>Nature Favourable/Unfavourable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stealing</td>
<td>3</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>41</td>
<td>No</td>
<td>2</td>
<td>- F</td>
</tr>
<tr>
<td>Cheating</td>
<td>70</td>
<td>No</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Yes</td>
<td>2</td>
<td>- F</td>
</tr>
<tr>
<td>Absconding Classes</td>
<td>13</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>No</td>
<td>2</td>
<td>- F</td>
</tr>
<tr>
<td></td>
<td>39</td>
<td>No</td>
<td>2</td>
<td>- F</td>
</tr>
<tr>
<td>Over Talkativeness</td>
<td>4</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>32</td>
<td>No</td>
<td>2</td>
<td>+ F</td>
</tr>
<tr>
<td>Over Fashion</td>
<td>10</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>Consciousness</td>
<td>5</td>
<td>Yes</td>
<td>2</td>
<td>- F</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>No</td>
<td>2</td>
<td>- F</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>Irresponsibility</td>
<td>14</td>
<td>No</td>
<td>2</td>
<td>+ F</td>
</tr>
<tr>
<td></td>
<td>42</td>
<td>No</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>Lying</td>
<td>6</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>44</td>
<td>No</td>
<td>2</td>
<td>+ F</td>
</tr>
<tr>
<td>Loose-in-Tongue</td>
<td>9</td>
<td>No</td>
<td>2</td>
<td>- F</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>Teasing</td>
<td>49</td>
<td>No</td>
<td>2</td>
<td>- F</td>
</tr>
<tr>
<td></td>
<td>52</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>Reading cheap literature</td>
<td>55</td>
<td>Yes</td>
<td>2</td>
<td>+ F</td>
</tr>
<tr>
<td></td>
<td>53</td>
<td>Yes</td>
<td>2</td>
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<td></td>
<td>11</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>Being Temperamental</td>
<td>7</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>59</td>
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<td>2</td>
<td>+ UF</td>
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<tr>
<td></td>
<td>57</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>Stubbornness</td>
<td>16</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>No</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>Smoking</td>
<td>18</td>
<td>No</td>
<td>2</td>
<td>- F</td>
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<tr>
<td></td>
<td>29</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>Jealousy</td>
<td>27</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>Day dreaming</td>
<td>17</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>Yes</td>
<td>2</td>
<td>+ UF</td>
</tr>
<tr>
<td>No.</td>
<td>Trait</td>
<td>Rating</td>
<td>Code</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------</td>
<td>--------</td>
<td>------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>16</td>
<td>Disobedience</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Gangstering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Refuting parental supervision</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Interest in opposite sex</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Feeling of insecurity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Non-participation in extra-curricular activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Forgetting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Challenging</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Shyness</td>
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<tr>
<td>25</td>
<td>Clumsiness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Seclusiveness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Eating or chewing in class</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Sexual Perversion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TOTAL STATEMENTS = 70</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>NATUREWISE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ UF</td>
<td>Positively statements</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- UF</td>
<td>Negatively unfavourable</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ F</td>
<td>Positively favourable</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- F</td>
<td>Negatively favourable</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Caθth statements</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Standardization of ABPQ

The ABPQ has been constructed by the investigator for the purpose of this study. It is not a readymade standardized tool therefore, if it is to measure any characteristics involving certain procedures according to specified rules, then it is necessary to study the procedures for evaluating the quality of the instrument developed.

Is it consistent? How accurately does it measure the purpose for which it is constructed? In other words, is the Adolescent Behaviour Problem Questionnaire reliable and valid?

i) Reliability:

Reliability can be defined as the ratio of true variance in a set of scores to the total or obtained variance.

\[ r_{xx} = \frac{S^2_T}{S^2_X} \]

Where \( r_{xx} \) is the reliability of the measuring instrument, \( S^2_T \) the variance of true scores, and \( S^2_X \) the variance of obtained scores. Reliability is the property of the instrument, not of an individual. A measure is reliable to the extent that the average difference between two measurements independently obtained in the same classroom is smaller than the average difference between the measurements obtained in different classrooms.

Unreliability can come about in two ways - most commonly it occurs when two measures of the same class tend to differ too much - because the behaviours are unstable, because the different items to be measured lack consistency or for some other reason, it may also result from the fact that differences between different classes are small.

The term reliability coefficient refers to the correlation to be expected between scores based on observations made by different observers at different times. (Bhalwankar A.G. 1978-79, pp. 34-36.)
Estimation of Stability:

a) Test-Retest Reliability

b) Split-half Reliability.

a) Test-Retest Reliability -

In order to be able to estimate the stability of behaviour problems in adolescents' i.e. how closely two records based on different visits will agree, the behaviours are recorded on two different occasions.

The Test-Retest method is the simplest method of determining agreement between two sets of scores. Given sufficient time interval between the first and second administration of a test to offset memory, practice and other carry over effects, the retest coefficient between a close estimate of the stability of the test scores.

Procedure -

The investigator selected the following samples:

1) A sample of randomly selected thirty adolescents (16-17 years) of Class XI.

2) A purposive sample of fifteen adolescents identified by the teacher as being problematic.

3) A purposive sample of fifteen adolescents identified by the teacher as being non-problematic.

The three samples were administered the ABPQ at the same time. The total score on the ABPQ was compiled as the test score for each adolescent. Exactly six weeks later the same ABPQ was administered to the same sample. Total scores for each adolescent was compiled. This was the score on the retest.

The Test-Retest (repetition) reliability was calculated using a computer. It was found to be as follows:
<table>
<thead>
<tr>
<th>Sr No.</th>
<th>Type of sample</th>
<th>Number</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Problematic adolescents</td>
<td>15</td>
<td>.97</td>
</tr>
<tr>
<td>2.</td>
<td>Non-problematic adolescents</td>
<td>15</td>
<td>.85</td>
</tr>
<tr>
<td>3.</td>
<td>Random Sample</td>
<td>30</td>
<td>.79</td>
</tr>
</tbody>
</table>

The reliability of the Adolescent Behaviour Problem Questionnaire from the Test-retest procedure indicates positive correlation. Appendix J gives the calculation.

The split Half reliability was calculated as follows:

b) The Split-Half Method -

In the Split-Half method the test is first divided into two equivalent halves and the correlation found for these half-tests. From the reliability of the half test, the self-correlation of the whole test is then estimated by the Spearman-Brown prophecy formula.

\[
\rho_{11} = \frac{2r_{1/2}\frac{1}{n}}{1 + r_{1/2}\frac{1}{n}}
\]

where \( r \) = reliability coefficient of the whole test (Garrett, H.E., p. 339, 1985).

The ABPQ is composed of seventy statements, out of which only sixty two are relevant to the study - the remaining eight being catch statements. The statements are positively/negatively favourable and positively/negatively unfavourable - direct statements. To derive at two equivalent halves, the researcher classified the statements as follows:
Total of positive favourable statements   =  9
Total of negatively favourable statements = 11
Total of positively unfavourable statements  =  32
Total of negatively unfavourable statements = 10

Eight statements No. 1, 2, 15, 65, 66, 67, 68 and 69 were included as 'Catch Statements' only, therefore not related to the study.

Care was taken to split the Questionnaire in two halves keeping in mind that each behaviour problem was represented equally in both halves. Five behaviour problems namely 'Overfashion Consciousness,' 'Reading Cheap Literature,' 'Being Temperamental,' 'Non-Participation in Extra curricular Activities,' 'Eating or chewing in class' and 'Sexual Perversion' had odd number of statements 1, 3 and 5. Their statements were weighed, grouped and distributed in the two equated forms Form A and Form B, to the best of the researchers' knowledge. In this way the Questionnaire was split into two equal halves. Table No. 3.20 gives details of the distribution behaviour problemwise, statement numberwise and ± favourable/± unfavourablewise of the 2 halves Form A and Form B.

Table 3.20 follows overleaf.
### TABLE 3.20
SPLIT-HALF RELIABILITY: ADOLESCENT BEHAVIOUR PROBLEM QUESTIONNAIRE

<table>
<thead>
<tr>
<th>Sr. Behaviour Problem</th>
<th>State- Form 'A'</th>
<th>State- Form 'B'</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>+ F/+ UF</td>
<td>+ F/+ UF</td>
</tr>
<tr>
<td>1. Stealing</td>
<td>3 + UF</td>
<td>41 - F</td>
</tr>
<tr>
<td>2. Cheating</td>
<td>70 + UF</td>
<td>12 - UF</td>
</tr>
<tr>
<td>3. Absconding Classes</td>
<td>13 + UF</td>
<td>34 + UF</td>
</tr>
<tr>
<td></td>
<td>36 - F</td>
<td>39 - F</td>
</tr>
<tr>
<td>4. Overtalkativeness</td>
<td>4 + UF</td>
<td>32 + F</td>
</tr>
<tr>
<td>5. Overfashion</td>
<td>10 + UF</td>
<td>5 - F</td>
</tr>
<tr>
<td></td>
<td>8 + UF</td>
<td>30 - F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>28 - UF</td>
</tr>
<tr>
<td>6. Irresponsibility</td>
<td>14 + F</td>
<td>42 + UF</td>
</tr>
<tr>
<td>7. Lying</td>
<td>6 + UF</td>
<td>44 + F</td>
</tr>
<tr>
<td>8. Loose in Tongue</td>
<td>9 - F</td>
<td>45 + UF</td>
</tr>
<tr>
<td>9. Teasing</td>
<td>49 - F</td>
<td>52 + UF</td>
</tr>
<tr>
<td>10. Reading cheap Literature</td>
<td>55 + F</td>
<td>53 + UF</td>
</tr>
<tr>
<td></td>
<td>57 + UF</td>
<td>59 + UF</td>
</tr>
<tr>
<td>11. Being Temperamental</td>
<td>7 + UF</td>
<td>57 + UF</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Stubbornness</td>
<td>16 + UF</td>
<td>31 - F</td>
</tr>
<tr>
<td>13. Smoking</td>
<td>16 - F</td>
<td>29 + UF</td>
</tr>
<tr>
<td>14. Jealously</td>
<td>27 + UF</td>
<td>22 - F</td>
</tr>
<tr>
<td>15. Day Dreaming</td>
<td>17 + UF</td>
<td>23 + UF</td>
</tr>
<tr>
<td>16. Disobedience</td>
<td>19 - UF</td>
<td>24 - UF</td>
</tr>
<tr>
<td>Sr. No.</td>
<td>Type of Statement</td>
<td>A Form No.</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>1</td>
<td>Positively favourable (+F)</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Negative favourable (-F)</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Positively unfavourable (+UF)</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>Negatively unfavourable (-UF)</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>31</td>
</tr>
</tbody>
</table>
Procedure -

A total sample of fifty adolescents i.e. five from each of the ten selected institutions were randomly selected for the split-half reliability test.

The Adolescent Behaviour Problem Questionnaire was administered to them by the researcher and collected immediately on completion. Using the Spearman-Brown Prophecy formula (Garrett H.E., 1985, p. 339).

\[
\rho_{\text{hl}} = \frac{2r \ 1/2 \ \overline{\text{r}}}{1 + r \ 1/2 \ \overline{\text{r}}}
\]

The split-half reliability was calculated at .92 which indicates that the Adolescent Behaviour Problem Questionnaire has high internal consistency and its test scores are dependable - therefore the tool is reliable. Appendix K gives the statistical details.

2) Validity:

Any scores have meaning only when they are related to other psychologically meaningful variables. Although theoretically it would be possible to develop a perfectly reliable measuring instrument whose score were not correlated with any other variable, the measuring instrument would be of no practical use, as it would measure with high consistency but no validity.

The validity of a test is defined as:

1) The extent to which the instrument measures a hypothesized underlying trait or construct or

2) The relationship between test scores and some extra test criterion measure.

Estimation of Criterion Related Validity - implicit in the concept of criterion related validity is the idea that
measuring instruments are used as part of a decision making process (Bhalwankar, A.G., p. 42, 1979).

i) Decision making accuracy:

A decision maker is always interested in the accuracy of the decisions; he strives to increase correct decisions and decrease incorrect decisions. Therefore one way to evaluate a decision maker's performance is to determine the proportion of his decisions which are correct. The most valid test is the one that produces the greatest proportion of decisions.

To derive an index of decision making accuracy the researcher selected 6 adolescent behaviour problems ranked as frequently occurring ones by teaching staff educationists/psychologists and as indicated by the researcher's previous studies (Yeole C.M., 1976). The six behavioural problems were:

1. Loose in tongue
2. Disobedience
3. Forgetting
4. Clumsiness
5. Gangstering aimlessly
6. Overtalkativeness.

Procedure:

The researcher contacted a Junior College teaching staff member. She was asked to select 2 groups of 15 adolescents purposively. In the first group she selected those adolescents who according to her observation and experience exhibited one or more of the above six behaviour problems. In the second group she selected 15 adolescents who according to her did not exhibit any of the above six behaviour problems.

The Adolescent Behaviour Problem Questionnaire was administered to both the groups. Simultaneously and total scores of each adolescent on the six behaviour problems was calculated.
The result was, two sets of scores for each student i.e. (a) teachers
decision of presence/absence of behaviour problem (Yes/No). (b) Score on the
six behaviour problems - the range possible scores was divided into two
groups. Those scoring 18 or more were said to have problems 'Yes' those
with a score below 18 were said not to have any behaviour problems. The clas-
sification of test scores is in terms of predicted outcomes. The predicted out-
come is compared to the actual outcome.

In the simplest case, where both predictor (teacher) and criterion
data (score) are dichotomized there will be four groups:

1. Adolescents predicted to have behaviour problems and who had
   them.

2. Adolescent predicted not to have behaviour problems but who had them.

3. Adolescents predicted not to have behaviour problems and who did not have them.

4. Adolescents predicted to have behaviour problems but who did not have them.
<table>
<thead>
<tr>
<th>Test Prediction</th>
<th>Test Teacher Prediction</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>(A)</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>(18 and above)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>(C)</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>(Below 18)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Teacher Prediction  
No = A  
Yes = B  
Score on Test  
Yes = C  
No = D  

Details of criterion performance validity are given in Appendix L.
Interpretation of indices: It can be concluded (i) that the Adolescent Behaviour Problem Questionnaire is more valid if validity is defined as decision making accuracy (ii) is more significant than (iii) it indicates that the Adolescent Behaviour Problem Questionnaire has high validity in identifying the presence of behaviour problems.80 on the index of decision making accuracy also indicates high content validity of the questionnaire.

CONTENT VALIDITY:

It is desirable to collect some sort of evidence that a test measures the precise characteristics for which it is designed. In such situation the content validity is the most appropriate validity information. Ebel (1966) has started that all statistical methods for test validation are based ultimately upon common sense agreement concerning what is being measured by a particular measurement procedure. Therefore, an attempt has been made to establish content validity of the ABPQ. The evidence of content validity as suggested by Ebel (1966), is obtained from the examination of the tool by competent judges. Five experts consisting of two educationists two consultant statisticians and one psychologist, were requested to give their views regarding the suitability and content of the ABPQ (Appendix M - List of names of experts). The experts agreed with all the items, statements and scoring procedure of the ABPQ. Thus the tool can be said to possess content validity.

The Adolescent Behaviour Problem Questionnaire having successfully undergone the tests of reliability and validity was ready for the try out study.

TRY OUT/PILOT STUDY:

A try out-cum-pilot study on the adolescent behaviour problem questionnaire was undertaken on a small sample of 50 randomly selected adolescents - five from each of the ten selected institutions, to find out if:

1) Directions given in the questionnaire were clearly understood by the adolescents.

2) The language was understood and wordings of the
statements were clear.

3) The arrangement and presentation of statements required any technical changes.

3) Statements meant the same thing to the subject as they did to the researcher.

5) Time required for completion of the questionnaire was within limits (30-45 minutes).

It was found that adolescents could fill in the questionnaire without any problems instructions were clear and wordings understandable and it could be completed within time limits by all.

The questionnaire was found to be reliable, valid and ready for administration to the selected sample.

Methods of data collection:

The investigator visited each of the ten selected institutions in the first week of August 1986 when the lists of the newly admitted students to Class XI was put up. List of names of students and teachers of each institution were collected for sample selection. During the same visit permission to collect data from students and teachers was sought from the authorities, separate dates for data collection were fixed for students and teachers of each institution respectively.

The sample for the study were selected by the random list method. They were invited on the specified date, in their own institutions. The researcher checked the sample, distributed the questionnaire, gave necessary instructions, cleared any related doubts and brought back all the completed questionnaires. On the same day students percentage of marks secured on the Class X Board Examination, 1986 were collected from the institution's record.

Data collection commenced on 28th August, 1986 exactly two months after the declaration of the Class XI Board Examination results. Data collection was completed by end of September, 1986. Appendix N gives the time plan of data collection.
### Table No. 3.22: Scoring of Questionnaire

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Behaviour</th>
<th>Statement No.</th>
<th>Maximum Score</th>
<th>Limit of Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>High Frequency of Behaviour</td>
<td>Medium Frequency of Behaviour</td>
</tr>
<tr>
<td>1</td>
<td>Stealing</td>
<td>3</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Cheating</td>
<td>70</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>Absconding Classes</td>
<td>13</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Over talkativeness</td>
<td>4</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Over fashion consciousness</td>
<td>5</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>6</td>
<td>Irresponsibility</td>
<td>14</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>7</td>
<td>Lying</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>8</td>
<td>Loose-in-tongue</td>
<td>9</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>Teasing</td>
<td>49</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>10</td>
<td>Reading cheap literature</td>
<td>11</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>11</td>
<td>Being temperamental</td>
<td>7</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>12</td>
<td>Stubbornness</td>
<td>31</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>13</td>
<td>Smoking</td>
<td>18</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>14</td>
<td>Jealousy</td>
<td>22</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>15</td>
<td>Day Dreaming</td>
<td>17</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>16</td>
<td>Disobedience</td>
<td>19</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Statement Numbers</td>
<td>High Score</td>
<td>Medium Score</td>
<td>Low Score</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>------------</td>
<td>--------------</td>
<td>-----------</td>
<td></td>
</tr>
<tr>
<td>Refuting Parental Supervision</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Interest in opposite Sex</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Feeling of Insecurity</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Non-participation in extra-curricular activities</td>
<td>6</td>
<td>4, 5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Forgetting</td>
<td>6</td>
<td>4</td>
<td>3, 2</td>
<td></td>
</tr>
<tr>
<td>Challenging</td>
<td>6</td>
<td>4</td>
<td>3, 2</td>
<td></td>
</tr>
<tr>
<td>Shyness</td>
<td>6</td>
<td>4</td>
<td>3, 2</td>
<td></td>
</tr>
<tr>
<td>Clumsiness</td>
<td>6</td>
<td>4</td>
<td>3, 2</td>
<td></td>
</tr>
<tr>
<td>Seclusiveness</td>
<td>6</td>
<td>4</td>
<td>3, 2</td>
<td></td>
</tr>
<tr>
<td>Eating or chewing in class</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Sexual Perversion</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

High Score - indicates presence of the problem at the highest frequency.

Medium Score - indicates the behaviour problem at its medium frequency.

Low Score - indicates the behaviour problem at its least or negligible frequency.

Statement numbers 1, 2, 15, 65, 66, 67, 68, 69 were catch statements added only for creating rapport with students. They are unrelated to the study.
500 Adolescent behaviour problem questionnaires were distributed, 50 in each of the ten institutions, but only 422 were found to be complete and relevant for the study. The collected data was scored systematically in the following way.

Scoring of the ABPQ:

Table No. 3.22 gives the details about the scoring of the questionnaire. The twenty eight behaviour problems were assigned their corresponding statements i.e. the behaviour problem 'Stealing' corresponded to statements number 3 and 41. The presence of the problem was indicated by a tick mark (✓) on statement 3 - scoring 2 points and a cross mark (X) on statement 41 scoring 2 points - a maximum score of 4 points indicated high frequency or high stealing problem. A medium tendency could be indicated by a tick mark (✓) on statement 3 and a tick mark (✓) on statement 41 - scoring 3 points or another combination of cross marks (X) on statement 3 and 41 - scoring 3 points. A low tendency was indicated by a cross mark (X) on statement 3 and a tick mark (✓) on statement 41 - scoring 2 points. From Table No. 3.22 it is clear that of the 28 behaviour problems the high medium and low scores of 4, 3 and 2 points respectively differ in medium and low scores of 4, 3 and 2 points respectively differ in behaviour problems numbered 3, 5, 10, 11, 21, 27 and 28. This was so because a consistency in the number of statements for each behaviour problem could not be maintained. Some behaviour problems like 'Over fashion consciousness' required 5 statements to get the exact meaning whereas others like 'Eating or chewing in class', 'Sexual perversion' where clear with the use of only one statement each.

After deriving at the total scores for each of the 28 problems, scores on behaviour problems numbered 3, 5, 10, 11, 21, 27 and 28 in Table No. 3.22 were equated mathematically (percentage calculation) with the other 21 problems so as to permit application of proper statistical treatment and correct interpretation.

Tool No. 2: Adolescent Behaviour Problem (ABPRS)

A rating scale means the judgement of one person or persons...
by another. "Rating is, in essence directed observation" writes Strang, R. (1956). A.S. Bone defines, "Rating is the term applied to expression of opinion or judgement regarding some situation, object or character. Opinions are usually expressed on a scale of value.

A rating scale is, therefore, a method by which we systematize the expression of opinion concerning a trait. The ratings may be done by parents, teachers, a board of interviewers and judges or by one's self as well. The two characteristics of a rating scale are (a) description of the characteristic to be rated and (b) some method by which the quality, frequency or importance of each item to be rated is given. Keeping in mind the general characteristics, advantages and limitations of a rating scale, the researcher found it to be the most suitable and effective tool for collecting data from the teaching staff, to form a supplementary source for enhancing the understanding of adolescents.

1) Construction of Rating Scale:

In order to find out the frequency of prevalence of the 28 behaviour problems a rating scale for the teaching staff was constructed based on the Likert Method of summated ratings. (Best John, p. 170, 1959)

To facilitate analysis certain demographic information like sex, qualification, teaching experience, medium of instruction and faculty were asked.

Each of the 28 behaviour problems under study was rated on a five point scale marked A, B, C, D, E with specific ranges of percentages allotted for each scale as follows:

- **A)** Most frequently prevalent behaviour problem which is common among cent percent of students

- **B)** Frequently prevalent behaviour seen among 60 - 80% of the students

- **C)** On an average 40 - 60% of students indulge in
D) Rather noteworthy but not very frequent seen among 20 - 40% students

F) Not at all a problem 0 - 20%

In order that each behaviour problem was understood as desired by the researcher, clarifications for each of the 28 behaviour problems were made in brackets i.e. 'Stealing' (to carry off - refers to stealing notes, library books, pages of library books, pens, etc.). 'Cheating' (to trick, to defraud - refers to copying in class, during tests or examination.)

If the teacher felt that a particular problem e.g. 'Jealousy' existed to an extent of 70% in his adolescent students he would circle the alphabet (B) for that particular behaviour. 'Jealousy' No. 14.

Clear instructions were provided for filling or rating the Rating Scale. A copy of the Rating Scale is attached as Appendix F.

Content Validity:

The rating scales content validity was established taking expert opinions from applied statistics, educationists and psychologists. (Appendix M)

2) Try out -

A tryout on ten teaching staff members randomly selected indicated that the Rating Scale was well understood and consistent. It was ready for administration to the selected sample.

3) Method of data collection -

The rating scale was administered to the sample selected by the researcher personally at their respective institutions. 150 rating scales were administered and could not be immediately collected as the teaching staff desired time for contemplation. They were collected as and when completed. 104 were found to be relevant.

4) Scoring of the Rating Scale -

To facilitate scoring of the rating scale, the five point
scale marked A, B, C, D and E were allotted 5, 4, 3, 2 and 1 point respectively. By encircling (A) it would indicate 5 points or the existence of a particular problem as cent percent (100/100) in the adolescents. Totals of scores by 104 teaching staff were tabulated and analysed under the following demographic heads. (a) Type of institution, (b) Sex, (c) Faculty, (d) Medium of Instruction, (e) qualifications, (f) teaching experience of the staff members.

5) Methods of Data Analysis -

With the derivation of total scores the ranking method was utilised to indicate the frequency of the problems. The behaviour problem with the highest score was ranked 1 which meant that, the particular problem was opinioned as the most frequent problem existant in the adolescents. Each of the 28 behaviour problems was ranked and its frequency thus established.

Tool No.3: Adolescent Behaviour Problem Check List (ABPCC)

1) Construction and Method of Data Collection -

A check list consisting of the 28 behaviour problems was mailed to 20 eminent educationists and psychologists selected purposively. These included Heads of the Departments of Education and Psychology of Universities. (Appendix B)

This study was felt essential as it would add an interesting dimension to the study. Educationists and Psychologists are equally interested in the 'adolescent' and his problems. Though they do not come in direct contact, they definitely observe the adolescent and peep into his varied problems theoretically.

The Educationists and Psychologists were requested to give a rank order in the descending order to the 28 behaviour problems indicating rank 1 to the most frequent problem. They were requested to rank them strictly on the basis of their experience and observation. Copy of check list of Adolescent Behaviour Problems is attached as Appendix-G.

Of the 20 check lists mailed only 11 were received back duly
completed. Though the sample is small it is useful in establishing content validity of the Rating Scale.

2) Scoring of the Check List -

Scoring was done by adding all the ranks allotted by 11 judges to each of the 28 behaviour problems. The totals of each problem were later ranked in the ascending order i.e. the behaviour problem with the least total was indicated as the most prevalent one and the problem with the maximum total was indicated as the least prevalent one.

In this way the rank orders for all the 28 behaviour problems was derived giving the educationists and psychologists views about the frequency of each of the 28 behaviour problems.

Having secured the required data from adolescents, teaching staff and educationists/psychologists - academic achievement of the adolescents was collected from their respective institutions.

Tool No.4: Academic Achievement Check List (AACL) -

In the present study, Adolescents Class X Board Examination percentage of the total aggregate marks were taken as a standardized measure of their academic achievement. No special tests were administered. Academic Achievement is the dependent variable in the present study.

The Secondary School Certificate Examination (Class X) conducted by the Maharashtra State Board of Secondary and Higher Secondary Education, Pune is considered a standardized examination because paper setting for each paper is done systematically keeping in mind the following aspects:

i) Objectivewise distribution of marks.

ii) Sectionwise distribution of marks.

iii) Unitwise distribution of marks.

iv) Distribution of marks according to type of questions.

v) Pattern of the question paper.

vi) Instructions regarding the question paper.
Details of each aspect can be seen in Appendix-O. Specimen Question Papers of Biology and History give clear idea of both paper setting and paper connection of the Class X papers being systematically planned and carried out and therefore, standardized. Therefore, the research has utilized the percentage on the total aggregate marks attained by adolescents as a standardized tool for measuring their academic achievement.

3) Method of Analysis and Statistical Treatment:

Analysis of data in the present study is undertaken in six parts. The method of analysis and the statistical treatment given for each of the six parts is as follows:

**PART-I ADOLESCENT BEHAVIOUR PROBLEMS AS PERCEIVED BY THEIR TEACHING STAFF:**

Analysis and Statistical treatment:

The data collected from 104 teaching staff with the help of the ABPRS was classified according to the five variables namely:

a) Institutionwise
b) Sexwise
c) Experience wise
d) Facultywise

The total ratings of 104 teachers on each of the twenty eight behaviour problems were converted into percentage scores. Higher the percentage, more severe the problem. Ranks were allotted to each of the behaviour problem depending on the percentage. The rank order indicate the teachers perception of adolescent behaviour problems.

**PART-II: ADOLESCENT BEHAVIOUR PROBLEMS AS PERCEIVED BY EDUCATIONISTS/PSYCHOLOGISTS:**

Analysis and Statistical treatment:

Educationists/Psychologists were asked to rank the twenty eight behaviours problems as they perceived them in the adolescents.

Only eleven ABPCL were received and this formed a small but important
sample.

Ranks allotted to each behaviour problem were added. Lesser the total score more severe the behaviour problem. Based on the total score results were allotted. These ranks indicated the Educationists/Psychologists perception of adolescent behaviour problems.

**PART-III : ADOLESCENT BEHAVIOUR PROBLEMS AS PERCEIVED BY THE ADOLESCENTS :**

Analysis and Statistical Treatment :

The data collected from a sample of 422 adolescents on the ABPQ was computerized, but in order to get a total picture of the twenty eight behaviour problems as perceived by the adolescents the investigator found out the total scores for each of the twenty eight problems. Higher the score severe the problem. The scores were converted into rank orders. Part-III yielded the adolescents perception of the 28 behaviour problems.

**PART-IV : RELATIONSHIP OF ADOLESCENT BEHAVIOUR PROBLEMS WITH THE SELECTED TEN DEMOGRAPHIC VARIABLES :**

Analysis and Statistical Treatment :

The data collected from 422 adolescents with the help of the ABPQ was classified according to the ten Demographic Variables under their following dimensions:

1. Sex Male/Female
2. Faculty of Study Arts/Science/Commerce
3. Medium of Instruction English/Marathi
4. Type of Institution +2 Stage with College.
   +2 Stage with School
5. Type of Education Co-education Institution/
   Boys Institution/Girls
   Institution
6. a) Father’s Occupation Professional/Businessmen/
Farmer/Government Employee

b) Mother's Occupation Housewise/Working Mother

7. Father's Income

High above Rs.2500/- per month
Medium - Rs. 1,000/- to Rs. 2,500/- per month
Low - Below Rs. 1,000 per month

8. a) Father's Education Educated/Uneducated
b) Mother's Education Educated/Uneducated

9. Type of Family Nuclear Family/Joint family

10. Number and Ages of siblings

All above 17 years
All below 15 years
Equal number above and below him/her
Only child.

The data collected represents nominal measures, where clear definition of each category is made - these categories are naturally exclusive, there is no notion or order among the categories. One of the most servicable analysis used by statisticians in such cases is the Chi-square ($X^2$) test.

The Chi-square test applies only to discrete data, counted rather than measured values. The test is a test of independence, the idea that one variable is not affected by, or related to, another variables. The $X^2$ is not a measure of the degree of relationship. It is merely used to estimate the likelihood that some factor other than chance accounts for the apparent relationships. The computed $X^2$ value must equal or exceed the appropriate $X^2$. 
The Chi-square Test represents a useful method of comparing experimentally obtained results with those to be expected theoretically on some hypothesis. The difference between observed and expected frequencies is squared and divided by the expected number in each case - the sum of these quotients is $X^2$ or Chi-square value. Garrette, H.E. (1985, p. 253).

The Chi-square formula for testing agreement between observed and expected results is:

$$X^2 = \sum \left( \frac{Fo - Fe}{Fe} \right)^2$$

in which

- $Fo =$ Frequency of occurrence of observed or experimentally determined facts.
- $Fe =$ Expected frequency of occurrence on some hypothesis.

The more closely the observed results approximate to the expected, the smaller the chi-square and the closer the agreement between observed data and the hypothesis being tested. Contrarily, the larger the Chi-square the greater the probability of a real divergence of experimentally observed from expected results. To evaluate Chi-square we enter table (Garrett, H.E. 1985, p. 462) with the computed value of Chi-square and the appropriate number of degrees of freedom. The number of df = $(r-1)(c-1)$, in which $r$ is the number of rows and $c$ the number of columns in which the data are tabulated. From Table E we read $P$, the probability that the obtained $X^2$ is significant.

Appendix R gives the programme used to computerize the data for the Chi-square Test.

The Analysis was done as follows:

a) Establishing relationship of 28 behaviour problems in adolescents with the ten Demographic Variables under study i.e. sex,
faculty of study, medium of instruction, type of institution, type of education, fathers and mother’s occupation, father’s income, fathers and mothers education, type of family and number and ages of siblings.

**PART-V : RELATIONSHIP OF ADOLESCENT BEHAVIOUR PROBLEMS WITH THEIR ACADEMIC ACHIEVEMENT**

Analysis and Statistical treatment:

The data was collected from 422 adolescents using the ABPQ. Scores on the twenty eight problems were calculated. The Academic Achievement of each adolescent consisting of their Class X Secondary School Board Examination aggregate percentage of marks, was collected from their respective institutions.

Appendix I gives the calculation of the three categories of Academic Achievement which is as follows:

- High - 65% and above
- Medium - between 48% and 64%
- Low - 47% and below

The data being of a nominal measure, the non-parametric Chi-square test was used as in Part-IV. The relationship found significantly and highly significantly related were taken for the study. The unrelated relationship were also pointed out. When X is greater it indicates that the null hypothesis is rejected.

**PARTVI : A CORRELATIVE STUDY OF ADOLESCENT BEHAVIOUR PROBLEMS AS PERCEIVED BY TEACHING STAFF, EDUCATIONIST/PSYCHOLOGISTS AND ADOLESCENTS.**

Analysis and Statistical treatment:

The data used for Part-VI is borrowed from Part I, II and III i.e. perception of Teaching Staff, Educationists/Psychologists and the Adolescents, about Adolescent Behaviour problems their severity.

This data is available in rank order scores. The non-parametre correlation from rank differences, was found very useful.
to establish the extent to which these three samples agree or disagree in their perception about the frequency in occurrence of each of the twenty-eight behaviour problems.

The rank difference correlation coefficient computation is a quick and easy method as the data is available in ordinal form, the number of paired variables is more than 9 but less than 30 - with not more than a few ties in ranks.

By using the formula

\[ P = 1 - \frac{6 \times ED^2}{N(N^2-1)} \]

in which

\( P \) - coefficient of correlation from rank differences.

\( D \) = the difference between paired ranks.

\( ED \) = the sum of the squares of differences in ranks.

\( N \) = Number of pairs.

(Garrette, H.E., 1985, p. 372)

The scores obtained were analysed and presented in accordance with the requirements of the hypotheses as follows:

i) Teaching staff and psychologists/educationists perception of adolescents behaviour problems.

ii) Teaching staff and adolescents.

iii) Psychologists/educationists and adolescents.

iv) Students of +2 stage with colleges and students of +2 stage with schools.

v) Teaching staff of +2 stage stage with colleges and teaching staff of +2 stage with schools.

vi) Students of +2 stage college with teaching staff of same college.

vii) Students of +2 stage with school and teaching staff of same school.

C) CONFIRMATORY STUDY:

The society is in a constant state of flux. Technology and
the advancement of mankind brings about transformation is the society. The changes in the society affect the daily lives and behaviour of its inmates.

The data from adolescents for the present study was collected in August/September 1986. Exactly two years and eight months have elapsed from the time of collection of data to the presentation of results. During this period could the changes that have taken place in the society, change the trend and nature of behaviour problems faced by adolescents? This is the thought which crept in the mind of the researcher resulting in this confirmatory study in consultation with the guide.

A sample of fifty adolescents of class XI were randomly selected. They were administered the A B P Q, personally by the researcher, in the second week of May 1989. The score of the fifty adolescents on each of the twenty eight behaviour problems were totalled, rank orders allotted and then they were arranged in the descending order of scores. The highest score indicating the most frequently prevalent behaviour problem in adolescents.

A correlative study between the rank orders on the twenty eight behaviour problems collected as data for the research from adolescents and those collected for the confirmatory study was calculated with the help of the non parametric Spearman Rank order coefficient of correlation formula.

\[ r_s = 1 - \frac{6 \sum D^2}{N(N^2 - 1)} \]

(Best J.M., 1977, p.251)

4)PROCEDURE:

A study of adolescent behaviour problems, certain demographic variables in relation to academic achievement, has been an area of great interest to the researcher, bearing more grounds due to close association with the adolescent group for a long duration of time.

The present study is a normative study, one of the most popular research designs. The proceeding flow chart gives a systematic blueprint of the survey research. After a thorough review of related literature major and minor
objectives of the study were identified based on which the hypotheses were formulated (Step 1-5 in the flow chart).

The research was conducted in three main stages namely:

A) The preparatory stage
   a) Selection of the problem
   b) Tools used.
B) The main study
C) Confirmatory study.

The procedure for each stage will be discussed separately.

Stage-A: PREPARATORY STAGE

The preparatory stage chiefly involved the selection of behaviour problems for the study. After consulting experts, previous studies, textbooks, journals, Mooney Check list, Badami's List, the Adolescent Girls Problem Inventory (AGPL) etc., the researcher formulated a preliminary list of 165 behaviour problems. Studying 165 behaviour problems would be a very complicated, non-exhaustive study. After consulting experts and the guide it was decided to systematically reduce the number of behaviour problems to a sizable list.

Three different populations, closely associated with the adolescent in some way or the other were tapped, consisting of:
   - Teaching staff
   - Educationists/Psychologists
   - The adolescents themselves.

The researcher composed a check list of the 165 behaviour problems (Appendix A - Preliminary Check List - PCL). A sample of twenty educationists/psychologists were mailed the PCL with clear instructions of ranking only those behaviour problems they felt were prevalent in adolescents.

A simple random selection of fifty teaching staff, five from each of the ten institutions and one hundred adolescents i.e. ten from each of the ten institutions were randomly selected. The researcher herself visited the ten selected institutions. After taking permission from the authorities, the PCL was administered to the adolescents in the class-rooms and to the teaching staff in the staff room. After completion, the PCL was collected and ready for analysis.
In this way three sets of ranks for the 165 behaviour problems in the PCI were ranked by Teaching staff, Educationists/Psychologists and Adolescents - after computing the three ranks for each of the 165 behaviour problems - they were arranged in a descending order. Lowest score indicating the most severe problem. It was found that twenty eight behaviour problems were indicated as being commonly prevalent (APPENDIX D). The remaining were negligibly ranked indicating practically their nonexistence.

These were therefore not included in the present study but are recommend for further studies.

As part of the preparing stage the twenty eight behaviour problems selected systematically for the study, were defined so that their meanings were delimited for this study.

Having selected the behaviour problem it was essential to look for tools that would help identify the prevalent adolescent behaviour problems. A search for appropriate tools proved futile it was decided to prepare necessary tools. Behaviour problems were required to be studied from three dimensions. Teaching Staff, Educationists/Psychologists and the Adolescents themselves.

In the proceeding discussion on research design of this chapter, the appropriate methods and procedures adopted in the selection of all three samples has been dealt with in detail.

Having secured the sample appropriate tools were required. In consultation with the guide, study of parallel tools and with experts guidance three different tools for the three different samples were constructed for the purpose of:

a) Identifying and finding the frequency of Adolescent Behaviour problems as perceived by Educationists/Psychologists, Teaching staff and the Adolescents.

b) To collect selected demographic information about teaching staff and adolescents.
c) To collect adolescent academic achievement. The following self developed tools were used for the above purposes.

Tool - 1 - ABPQ - The Adolescent Behaviour Problem Questionnaire.

Tool - 2 - ABPRS - The Adolescent Behaviour Problem Rating Scale.

Tool - 3 - ABPCL - The Adolescent Behaviour Problem Checklist.

Tool - 4 - AACL - Academic Achievement Check List.

Stage B: THE MAIN STUDY

The main study was conducted in three following stages:

1. Collection of data from adolescents.
2. Collection of data from teaching staff.
3. Collection of data from educationists/psychologists.

The above three stages are procedurally demarcated, though while considering the time plan they overlap.

PURPOSE

The purpose of the main study was to:

1) to identify behaviour problem as perceived by adolescents, teaching staff, educationists/psychologists.
2) to classify adolescents, teaching staff on the basis of the selected demographic variables.
3) to classify adolescents on the basis of their academic achievement.

The main study involved the identification of adolescent behaviour problems from three different dimensions. Ready made tools were not available, therefore, the researcher had to develop, standardize and try-out self developed tools before administration.
DATA COLLECTION:

Data was collected in the following four stages:

1) Collection of data from Adolescents -

The data was collected from the adolescents with the help of the APBQ (Appendix £). The ABPQ was constructed and standardized. Its Test Retest Reliability (Appendix J) was as follows for:

- Problematic Adolescents: .97
- Non-problematic Adolescents: .85
- Random sample: .79

The ABPQ's split-half reliability was .92.

The Validity was established by:

1. Criterion Performance Validity (Appendix L)
2. Content Validity was established by expert opinions.

Having standardized the tool it underwent a successful try out and was thus ready for administration to the invited sample.

The researcher first visited the selected ten institutions and took different appointments dates with authorities for data collection from the ten institutions.

Actual data collection began in the last week of August, 1986 - just two months after the declaration of the adolescents Class X Board Examination results. Data collection was completed by the end of September 1986. 500 ABPQ were administered to the invited sample - few clarifications were required to be given during the process of answering them. These were collected immediately after they were answered. Only 422 ABPQ's form the study sample or the data producing sample of the present research. The data was classified, processed and interpreted.

2) Collection of data from Teaching Staff -

The ABPRS (appendix F) was constructed for identifying the severity of the twenty eight behaviour problems as perceived by the
teaching staff.

Clarifications of each behaviour problem was given and a five point rating scale (ABODE) indicated the severity of each problem. The teaching staff was requested to encircle the appropriate scale which gave the correct perception of the prevelancy of the problem according to him/her.

The content validity of the ABPRS was established through expert opinion (Appendix M). A try out study on ten randomly selected teaching staff indicated that the ABPRS was well understood and consistent. It was thus ready for administration.

The researcher visited each of the ten institutions as previously planned. 150 rating scales were administered to the invited sample. Teachers desired to contemplate before they rated the scale. On collection only 104 ABPRS were found to be the data giving sample. Data collected from the teaching staff was classified, analysed and interpreted.

3) Collection of data from Educationists/Psychologists -

During the same period the ABPCL was constructed by the researcher. It consisted of a list of the twenty eight behaviour problems. The respondents were requested to give ranks to each of the problems according to its prevalence in adolescents as perceived by them.

The ABPCL were mailed to the selected sample of twenty educationists and psychologists. The data producing sample consisted of only eleven ABPCLs though the sample was small it formed an important study group. The rank orders given by them to each of the twenty eight behaviour problems were compiled together. Lower the score higher the rank and greater the problem. In this way Educationists/Psychologists perception of the prevalence of the twenty eight behaviour problems was derived.

4) Collection of data from a fresh sample of adolescents -

For the confirmatory study, done exactly two years and eight months after collection of data from the adolescents sample, a fresh sample of fifty-Class XI adolescents was randomly selected. The ABPQ was administered to
them in the second week of May 1986. Rank orders were allotted to the twenty eight behaviour problems according to their scores.

2) TYPE OF DATA COLLECTED:

The type of data collected from Adolescents, Teaching Staff and Educationists/Psychologists with the help of the tools consisted of:

1. Scores by adolescents on the twenty eight behaviour problems.
2. Scores by adolescents on the twenty eight behaviour problems classified on the ten demographic variables.
3. Academic achievement of adolescent sample.
4. Scores by adolescents on the twenty eight behaviour problems classified on the three academic achievement categories.
5. Rating by teaching staff of the twenty eight behaviour problems classified according to the five selected demographic variables.
6. Rank order of the twenty eight behaviour problems as perceived by educationists/psychologists.
7. Rank order of the twenty eight behaviour problems as perceived by fresh sample of adolescents for confirmatory study.

3) METHOD OF ANALYSIS:

Analysis of the collected data was undertaken in the six parts which are as follows:

1. Analysis of the twenty eight adolescent behaviour as perceived by teaching staff. The ratings were converted into percentage scores and ranks were allotted. Higher the percentage more severe the problem a rank-order indicated teachers perception of adolescent behaviour problems.
2. Adolescent behaviour problems as perceived by educationists/psychologists. Rank orders indicated the severity of the twenty eight behaviour problems.
3. Scores on the ABPQ were analyzed to find out adolescent behaviour problems as perceived by the adolescents. These were analyzed rankwise indicating severity of the twenty eight behaviour problems.
4. Using the Chi-square test the relationship of adolescent
behaviour problems with the following selected ten demographic variables was analysed - keeping in mind the dimensions of each of the ten variables.

1. Sex  
2. Faculty of study  
3. Medium of Instruction  
4. Type of Institution  
5. Type of education  
6. Fathers and mother's occupation  
7. Fathers' income  
8. Fathers and mothers education  
9. Type of family  
10. Number and ages of siblings.

Only those relationships found highly significant and significant have been studied in this study. Those found non-significant have been suggested for further research.

5. Using the Chi-square test the relationship of adolescent behaviour problems with the three academic achievement categories - high, medium and low was established. As in 4 above highly significant and significant relationships have been considered in this study.

6. To add an interesting dimension to this study a rank-order correlation of coefficient study was done on the rank orders given to the twenty eight behaviour problems by Teaching staff, Educationists/Psychologists and the Adolescents themselves.

7. The non-parametric Sperman Rank order coefficient of correlation was used to find out the possible change in the trend of adolescent behaviour problems in 1986 and 1989 as perceived by the adolescents themselves.

Having discussed the method of analysis of data - the Analysis, Presentation and Interpretation of data follows in Chapter-IV.