

PROCEDURE OF THE STUDY

3.0 INTRODUCTION

In the foregoing chapter a brief review of the researches conducted in the area related to the present investigation was presented. The review of literature gave the researcher an understanding of the previous work that has been already done in the area. It enabled the researcher to explore the tools related to the study; methodology adopted for such study and gave insight into the development of intervention program. This chapter is a description of the actual procedure followed by the investigator with a view to collect data, to analyze them and to draw conclusions in the light of the aims and objectives of the study. The subject matter is organized under the heads as follow.

3.1 Methodology of the Study

3.2 Selection of the Sample

3.3 Selection and Construction of the Tools

3.4 Administration of Various Tools

3.5 Scoring Procedure

3.6 Statistical Techniques Employed

3.1 METHODOLOGY OF THE STUDY

Keeping the nature of the problem the researcher carried out the present investigation on the lines of Quasi-Experimental design. This design is preferred in the present research as it was not possible to conduct a true experiment. Also, neither full control over the scheduling of experimental condition nor the ability to randomize could be realized.

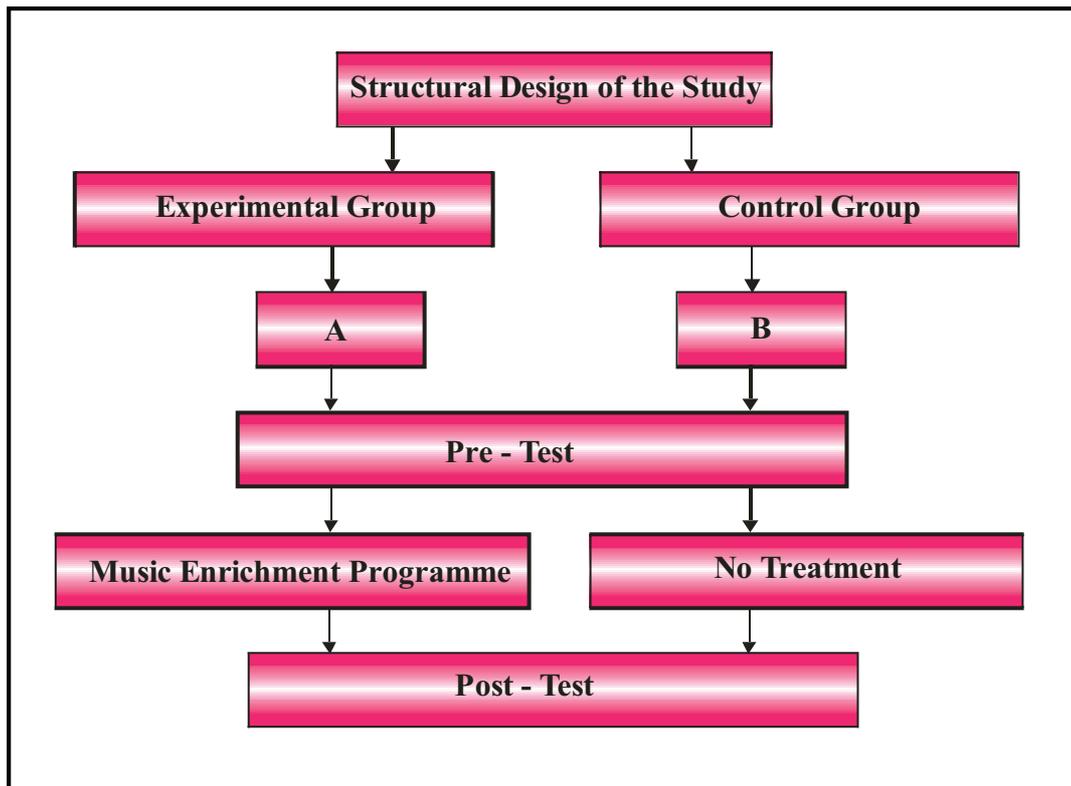


Figure 3.1: Structural Design of the Study

3.2 SELECTION OF THE SAMPLE

Selection of the sample is an integral inner most, essential, and central part of every research project and its success depend upon the right selection of the sample. Therefore it is necessary for researcher to select a suitable, appropriate and apposite sample. According to Good (1952), Sampling is an essential part of all scientific procedure. All experiments are never the fewer samples from a large universe of possible experimental situations.

Sampling Method

In the present study purposive sampling method was employed for the selection of the sample units.

Selection of the Area and School

A list of schools for special children was taken from District Viklang Kalyan Vibhag, Agra. From this list, schools for Mentally Challenged Children were sorted. These are:

1. Tears school – Situated in Shashtripuram, Sikandra, Agra.
2. Asha school – Situated in Mall road, Sadar Bazar, Agra.

3. Sneh school - Situated in Bodala, Agra.

The investigator visited all the schools and searched out their special features and purposely selected Asha School for present investigation because of the following reasons:

1. It had enough number of students who can easily be divided into two groups- Experimental and Control Group.
2. The management committee of the school was ready to permit the investigator to carry out the research work in school for a longer period (six months).

Description of Sample Frame (Asha School)

Asha School, Agra was established under the aegis of Army Wives Welfare Association (AWWA) in Oct 1998. The school aims at providing education and rehabilitation training facilities for differently-able children of Armed Forces personnel, civilian employees paid from defense services estimates and civilians. From its humble beginning with strength of three students, the school has now flourished to well establish institute with a dedicated staff of special educators, qualified academic teachers, physiotherapist, speech therapist, music teacher, art & craft teacher and vocational trainer. 59 students are now enrolled in the school. Asha School is registered under Society Act Section 21 of 1860. Registered with Viklang Kalyan Vibhag, Lucknow (UP).

Selection of the Sampling Unit (Students – Mentally Challenged Children)

Out of the Sample frame of 59 Mentally Challenged Children two groups of 20 children each were matched and randomly selected for two groups - the Experimental group and Control group. The detailed sampling procedure is shown in the figure 3.1 in the form of flow chart.

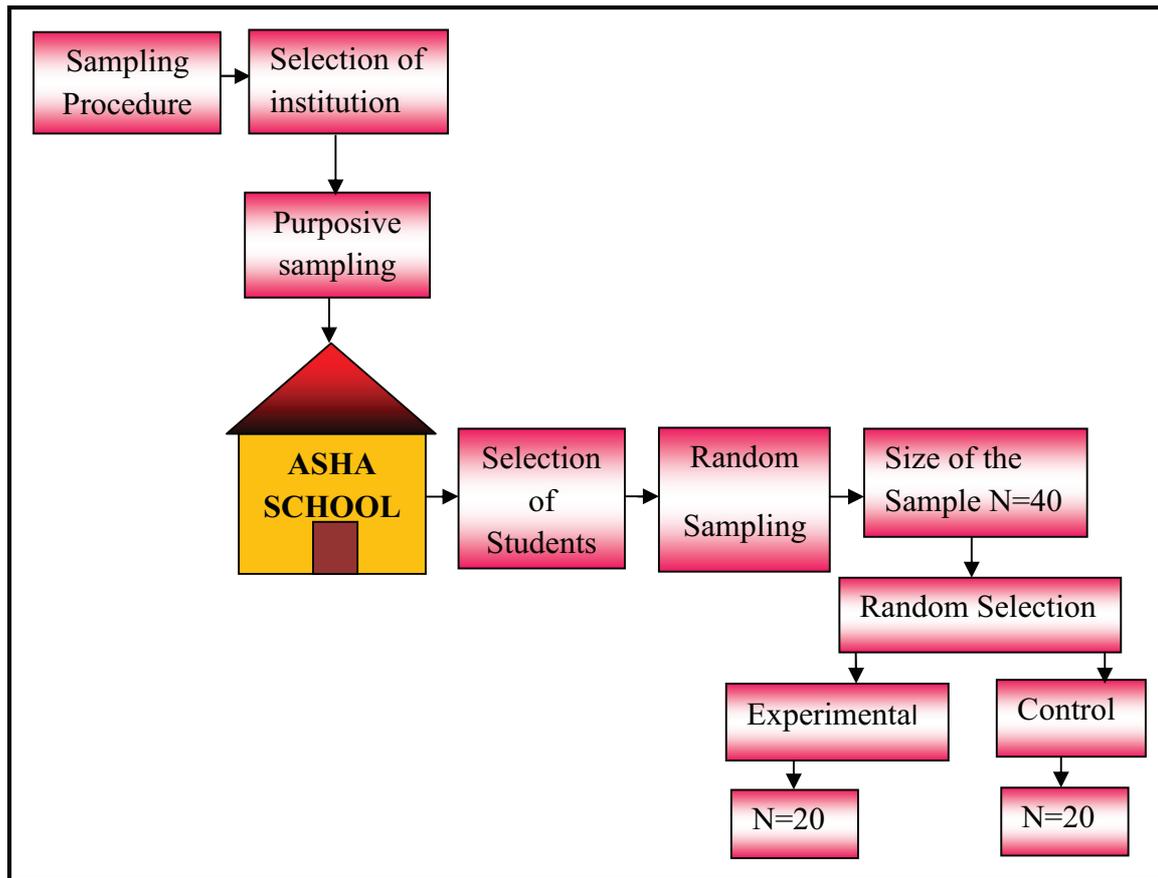


Figure 3.2: Procedure of Sample Selection

3.3 SELECTION AND CONSTRUCTION OF TOOLS

Survey of the Various Tools for Academic Achievement

For selection of the tool researcher reviewed the literature and explored various tools related to the present investigation which have been employed in previous such researches. The investigator found several paper-pencil tests and other tests constructed and standardized by various authors for measuring academic achievement of normal children but none was meant for measuring academic achievement of mentally challenged children. As there was no test available for measuring Academic achievement of mentally challenged children, the investigator decided to collect the percentage of aggregate marks of children obtained by each student in the regular test taken by their teachers in the following subjects:

1. Fine motor skills
2. Social skills
3. Communication - English and Hindi Recitation
4. Cognitive skills
5. Art and Craft

Survey of the Various Tools for Adjustment

The tools used for measuring adjustment for normal children as per the review of related literature are listed in table 3.1.

Table 3.1: Name, Author, Language of the Tool and Target Population for Measurement of Adjustment

S.No.	Tool	Author	Language	Population
1.	High School Adjustment Inventory	A.K.Singh, A. Sen Gupta	Hindi	High School Student
2.	Adjustment Inventory For School Students	A.K.P.Sinha and R.P. Singh	Hindi and English	School Students (Age Group 14-18)
3.	Bell's Adjustment Inventory	R.K. Ojha	Hindi and English	High School to Post-graduate Students

Since all the tools surveyed were meant for measuring adjustment of normal children and researcher did not come across any tool for measuring adjustment of mentally challenged children hence it was decided to construct the relevant tool.

3.4 CONSTRUCTION OF THE TOOLS

Construction of Adjustment Scale for Mentally Challenged Children

The adjustment scale was constructed for mentally challenged children. The process of construction of a research tool was not a matter of simply listing items that came to the researcher's mind. It was a rationale process involving much time, effort and thought. The steps followed by investigator in order to construct the adjustment scale are as follow:

1. Determination of the Data Required for Preparing Adjustment Scale

Items for the rating scale on adjustment were collected that include the items like personal, family, society, environmental etc. Through the process of brainstorming and review of related literature 45 such items were noted.

2. Determination of the Respondents' Level

As the choice of words and concepts depends upon the level of the respondents' knowledge, the level of the respondent was determined with reference to the population and sample of the present study. The respondents were mentally challenged children, their level was determined on the basis of observation and informal talks with them and their teachers.

3. Decision about Communication Mode

Since the students were mentally challenged children it was difficult to communicate with them, hence it was decided to gather the data about students' adjustment with the help of their teachers.

4. Instrument Drafting

The researcher examined the list of items and categorized them. The repetition of items was removed and similar items were grouped under different components. The ambiguous items which were difficult to understand were re-written. The resultant draft contained 40 items.

5. Preparation of First Draft

The first draft of the Scale was prepared containing 42 items. The items were related to different dimensions of adjustment like physical, mental and social.

6. Experts' Advice

The first draft was evaluated by experts. Each item of the scale was rigorously examined by the experts and their opinion was sought. The experts were selected from the area of Psychology, Education, Sociology, Language and experts of Special education. The detailed description of the experts consulted is given in the Table 2.

Table 3.2: Number of Experts Consulted for Revision of the First Draft of Adjustment Scale

Particulars of Experts	No. of Experts Consulted
Psychologists	2
Educationist (including experts of psychometry)	6
Sociologist	4
Special Education	4
Total	16

The researcher made necessary modifications in scale as per these experts' suggestions.

7. Try Out of the Test

For first tryout the investigator selected 10 mentally challenged children of Asha School who were not included in the final sample but were similar and compatible to them in all respects. After taking permission from the chairman of Asha School, investigator administered first try out of tool on the selected sample of 10 students.

8. Modification of the Tool

On basis of the experts' opinion and suggestions the first draft of adjustment scale was modified. The items of same dimensions were clubbed together as per experts' suggestions. The revised draft of adjustment scale had 37 items.

Construction of the Consciousness Scale

The researcher reviewed the literature for selecting appropriate tool for measuring level of consciousness. The tools used for measuring consciousness for normal children listed in table 3.3.

Table 3.3: Name, Author, Language of the Tool and Target Population for Measurement of Consciousness

S.No.	Tool	Author	Language	Population
1.	Consciousness Quotient Inventory	Ovidiu Brazdau	English	Adult
2.	Health Consciousness	Hyehyun Hong	English	Adult
3.	Self Consciousness Scale (SCS)	Fenigsten Scheir, Buss	English	Adult
4.	Phenomenology of Consciousness Inventory	Ronald Pekala	English	Adult
5.	Scale of Consciousness	David R. Hawkins	English	Adult

A perusal of the above mentioned research tools reveal that most of the tests are paper-pencil tests and are meant for normal children, who are able to respond on test items themselves. None of the above test was found fit to collect data from the sample of mentally challenged children. Therefore researcher decided to construct a tool which could be administered on mentally challenged children. The steps to construct the tool for measuring consciousness of mentally challenged children are as follow:

- Conceptual framework of Consciousness
- Survey of the various tools for Consciousness
- Preparation of first draft
- Experts' opinion
- Editing –Modification
- Tryout of the Consciousness Scale
- Final draft of the Consciousness Scale
- Scoring Procedure

1. Conceptual Framework of Consciousness

Since Consciousness is emerging variable in the field of Education and Psychology. The investigator studied this concept independently and in conjunction with mentally challenged children from various sources to have a sound knowledge of the concept of consciousness and to understand its various levels and dimensions. Some of the referred were Mentally Retarded Children (1971) by Harmiet Eleanor, The Significance of Consciousness (1998) by Siewert, Journal of Consciousness Studies Controversies in Science & thee Humanities, Consciousness and Concepts, An Introductory Essay (2007) by Rocco J. Gennaro, Vol. No. 14 Pp.1-19, Altered level of consciousness From Wikipedia

2. Survey of the Various Tools for Consciousness

It was done in order to find out various tools related to consciousness. A list of the tools surveyed are given in table 3.3. The study of these tools revealed that none of them was fit to measure the level of consciousness of mentally challenged children. Hence, the investigator decided to construct a tool for gathering data about the level of consciousness of mentally challenged children.

3. Preparation of the First Draft

The first draft of the tool was prepared on the basis of Consciousness Quotient Inventory. The first draft contained no. of items 62.

4. Experts' Opinion

The first draft was evaluated by experts. Each item of the scale was rigorously examined by the experts and their opinion was sought. The experts were selected from the area of Consciousness, Psychology, Education, Sociology, Language and experts of Special education.

Table 3.4: Number of Experts Consulted for Revision of the First Draft of Consciousness Scale

Particulars of Experts	No. of Experts Consulted
Psychologists	2
Educationist (including experts of psychometrics)	6
Sociology	4
Special Education	4
Experts in the area of Consciousness	5
Total	21

5. Modification of the Tool

On basis of the experts' opinion and suggestions the first draft of consciousness scale was modified. The items related to different dimensions of consciousness were reshuffled as per the experts' suggestions. The revised draft of consciousness scale had 56 items.

6. Try Out of the Consciousness Scale

To ensure the suitability of the second draft of consciousness scale it was tried out on to 10 mentally challenged children of Asha School.

7. Final Draft of the Consciousness Scale

After making necessary modifications the final draft of consciousness scale was prepared.

Table 3.5: Number of Test Items in Various Dimensions of Consciousness

S.No.	Dimensions	Item Number
1.	Physical Consciousness	11
2.	Emotional Consciousness	11
3.	Mental Consciousness	11
4.	Social Relational Consciousness	09
5.	Self Consciousness	08
6.	Spiritual Consciousness	06
	Total	56

3.5 STANDARDIZATION OF TOOLS

3.5.1 Standardization of Adjustment Scale

A. Reliability of the Scale

Reliability refers to the consistency of measurement. In order to determine the reliability of adjustment scale test-retest method was used. The scale was administered on 10 mentally challenged children. The scale was again administered on the same sample after 2 months. The coefficient of reliability was computed by finding correlation between adjustment scores obtained by administering the scale for the first time and adjustment scores obtained by administering scale second time (after 2 months). The value of the reliability coefficient of adjustment scale was found to be 0.78.

B. Validity of the Scale

The validity of the test means the degree to which the test actually measures which it is purports to measure. It provides the direct check on how well the test fulfills its objectives. The content validity of the adjustment scale was determined on the basis of the experts' opinion, who were requested to examine the Adjustment scale in relation to the determined objectives for assessing the validity or justification of the work.

3.5.2 Standardization of Consciousness Scale

A. Reliability of the Tool

For determining the reliability of consciousness scale it was administered on 10 mentally challenged children. The consciousness scale was again administered on the same students after period of 2 months. The coefficient of reliability was computed by finding correlation between consciousness scores obtained by administering the scale for the first time and consciousness scores obtained by administering scale second time (after 2 months). The value of the reliability coefficient of consciousness scale was found to be 0.72.

B. Validity of the Tool

With reference to scale measuring consciousness for mentally challenged children the content validity was considered of great importance. In psychometrics, content validity (also known as logical validity) refers to the extent to which a measure

represents all facets of a given social construct. In the present study, content validity was determined through experts' opinion. The test was given to 10 experts of Dayalbagh Educational Institute (Deemed University), Dayalbagh, Agra and Psychologist of Asha School, Agra to read and judge, whether each item of the test measured consciousness. They were asked to report the extent to which items were representative of the total hypothesized areas of occupations? They reported that items were largely measuring the consciousness of mentally challenged children. Thus the content validity of the consciousness scale was carefully scrutinized.

3.6 ADMINISTRATION OF VARIOUS TOOLS

Seeking Permission from the Principal

Permission was sought for collecting data on various independent and dependent variables and for administering music enrichment programme. The investigator first of all collected permission letter from the Dean, Faculty of Education and approached the Principal of Asha School. Principal of Asha School immediately granted permission. Investigator fixed date and time with the students and Teachers.

Formation of two Groups

Data was sought regarding the I.Q. of mentally challenged children from psychologist appointed in the school. The I. Q. of 80 percent of students in the school was found to be in the range of 35-49 (moderate mental retardation) since this forms the majority of students, hence sample for the study was selected from this list of students. The investigator then randomly divided the students into two groups of 20 each by matching their I.Q., Socio- economic status and interest.

Rapport Establishment

The investigator informally met the students and tried to converse with them. It was not easy to communicate with them as they did not follow the usual verbal language. The investigator talked to students with the help of teacher. Students started taking interest and responded when the investigator presented the action song with the music.

Pre -Test:

1. **Academic Achievement of two Groups-** For measuring academic achievement of the mentally challenged children of two groups the investigator noted half early

examination marks of the students from the School office. The students are evaluated two times in a year on various dimensions like-fine motor skills, social skills, communication - recitation of english and hindi, cognitive skill, art and craft. The investigator gathered total marks of students obtained by them in their half early exams.

Orientation of Teachers

Since the sample consists of mentally challenged children, it was difficult to collect the data directly from them. Hence the investigator planned to involve teacher for data collection. For this, the teachers were oriented about the tool and its use.

ADMINISTRATION OF TOOLS

The investigator fixed time and date for collecting data with the help of their teachers. The tools were administered with the help of their teachers.

3.7 SCORING OF THE CONSTRUCTED TOOLS

Scoring of Adjustment Scale

Adjustment scale is a five point equal appearing Likert type rating scale. The adjustment scale had in all 40 items. Each subject was rated on five point scale comprising Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) and Strongly Agree (SA). Most of these items were rated in descending order of 5, 4, 3, 2, 1, while nine items i.e. item no. 2, 5, 14, 15, 18, 22 and 25 were scored in ascending order.

The scoring process was as follow:-

Ascending Order:

SD	D	N	A	SA
1	2	3	4	5

Descending Order:

SD	D	N	A	SA
5	4	3	2	1

The total score on scale was the adjustment scale for each student.

Scoring of Consciousness Scale

56 items of consciousness scale were divided into six dimensions which physical consciousness, emotional consciousness, mental consciousness, social-relational consciousness, self-consciousness and spiritual consciousness. Five point Scale from Strongly Disagree (SD), Disagree (D), Neutral (N), Agree (A) and Strongly Agree (SA). Scoring of consciousness scale was done same as of adjustment scale (as mentioned in the previous paragraph).

Development of Music Enrichment Programme (MEP)

a) *Review of Related Literature, Library and Internet:* The investigator reviewed the literature related to music therapy and music enrichment programme developed for various researchers in the field of music and education. The researcher found the following such programmes:

- Rock Music Programme by Miller (1974)
- Instrumental Music Programme by Friedman (1959)
- Background Music-soft dreamy, distractive, popular and march Music by Roth (1975)
- Music Education Programme by Kiltz (1970)
- Music Programme by Mingert (1972)
- Music Enrichment Programme – Folk and Popular Songs by Douglas (1980)
- Music Enrichment Programme – Folk and Popular Music by Manorama Sharma (1996) in Music Therapy: Theory and Practice.

b) Experts' Opinion:

The investigator visited various institutions where music is taught at postgraduate level and took advice of the lecturers regarding development of music enrichment programme.

- Department of Music, Faculty of Arts, Dayalbagh Educational Institute, Deemed University Agra
- Department of Music, Smt.Baikunthi Devi Kanya Mahavidhyalaya Agra
- Department of Music, Smt. B.D.Jain Kanya Mahavidhyalaya Agra

c) Development of the First Draft:

As advised by the experts, investigator composed simple songs herself suitable for understanding various aspects of the curriculum of mentally challenged children. The intricacies of vocal music learnt in master's degree programme (M.A. Music Vocal) by the investigator proved helpful in developing the music enrichment programme.

d) Final Draft of the Music Enrichment Programme (MEP):

The Programme developed was assessed by various experts suggestions were taken and the final draft was developed accordingly. The first draft contained general songs like nursery rhymes and few other songs. The experts' gave suggestions to include only those songs which were focused on academics, adjustment and consciousness. Also the experts' asked to reduce the length of the songs. It was also suggested to present flash cards with songs and to introduce some action/movement with the songs. These suggestions were incorporated in the final draft of music enrichment programme. In this programme there were ten songs related to academic achievement, adjustment and level of consciousness.

e) Treatment:

The experimental group of mentally challenged children were exposed music enrichment programme for six months. The investigator being post graduate in music vocal developed music enrichment on her own. Further to ensure the quality and validity of programme guidance was sought from eminent professor in music. The songs were performed for the students. Along with the songs flashcards were also prepared related to the content.

Post - Test

For post-test, time and date for the test was fixed in consultation with the authority of the school. The test was conducted in two sessions.

Session - I - Scores of the academic achievement were collected from the respective teachers and adjustment scale was administered taking personal assistance of concerned teachers.

Session - II – Consciousness scale was administered in session II individually on each student.

3.8 STATISTICAL TECHNIQUES EMPLOYED

The statistical techniques employed for data analysis are as follow:

DESCRIPTIVE STATISTICAL MEASURE

In order to describe the characteristic of the sample and limit generalization to that particular group Mean and SD were computed.

Mean

The mean value was computed as central tendency of the distribution of adjustment scores and consciousness scores obtained on the five point rating scale.

Standard Deviation

A more stable index that reflected the degree of variability in a group of scores is Standard Deviation. The Standard Deviation was computed to the study the variation in the scores of pre and post-test to do other various computations.

INFERENTIAL STATISTICAL MEASURES

Inferential statistics were useful because they enabled the researcher to make generalizations or inferences about the population from the observation of the characteristics of the sample. The researcher used Mann-Whitney U- test for the resent study to compute significant difference of means of two groups.

Mann-Whitney U -Test

Mann-Whitney U- test is used when two independent samples are to be compared. It is a non parametric-test. This test is based on Ranks therefore scores on interval scale are not required. Therefore in view of the above characteristics, Mann-Whitney U- test was prepared for the present investigation in order to compare two group experimental and control.

GRAPHICAL REPRESENTATION

Graphical Representation of data often facilitated understanding of set of data. It helped in making data easier to read and interpret. Bar diagram was drawn to show the comparative scores of two groups.