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In the previous chapter of Review of Literature an attempt was made to present an exhaustive review of research studies and other literature having relevance to the present study. Same important findings emerged from the review which provided a theoretical orientation for the present study. As the basic aim of science is theory; i.e. to explain natural phenomenon, it was imperative to search for a theoretical base of the present study. As according to Kerlinger (1964) “if we accept theory as the ultimate aim of science, however, explanation and understanding become simply subaims of the ultimate aim”

This is not to say that all social scientific and educational researches are specifically and consciously theory oriented. Many a valuable researches are conducted with the shorter aims of finding only the specific relations between variables. But it is “nice to have a theory” (Kerlinger, 1964).

In the present study also certain inferences mentioned below were discernible from the review of literature, on which the theoretical orientation of the study is based:

1. Development of self-concept and self-esteem of blind children depends largely on the prevalent social – emotional environment at home school and in the society. Attitude of others, particularly the significant one play a vital role in determining the level and direction of self-concept and self-esteem. Since attitude of significant others towards blind children influences these variables to a greater extent, more positive changes may take place if family, friends, school and society adopt the positive attitudes towards blind persons. This means that the appropriate physical, social and emotional environment in which growth would take place in a school setting is important for
promoting positive self-concept and high self-esteem among the blind children. The mistaken belief that a blind child is helpless results often in denying the child accessibility to social, emotional and vocational opportunities. Social factors are more performance limiting than the physical constraints which are primary to the handicap.

2. Positive self-concept and high self-esteem are as important for the blind children as they are for the sighted or other group of disabled children in two ways (Fitts, 1972):
   a) The self concept is a valid predictor of many aspects of behavior;
   b) It is correlated with many other variables (feelings, attitudes, interpersonal behavior, mental health, scholastic achievement, success in life etc.) that determine the rehabilitation process.

3. “Adjustment to blindness, although perhaps difficult, is nevertheless possible” (Bauman, 1954 a, 1969). Positive self-concept and self-esteem are as important for adjustment process as other aspects. According to Arkoff (1968), the ingredients of good adjustment include “self insight (knowledge of one self), self-identity (sharp and stable image of oneself), self-acceptance (a positive) image of oneself self-esteem (pride in oneself) and self – disclosure (a willingness to let one self be known to others)”. 

4. The results of numerous research studies in the chapter review of literature are inconclusive and contradictory with regard to the benefits of different educational settings for the disabled, in this case blind children, in terms of social – emotional outcomes; i.e. growth of positive self-concept and enhancement of self-esteem. But it is definitely and clearly evidenced from the results of the studies that development of self –concept and self-concept is impacted by the social – emotional environment
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constituting the attitudes of others, particularly of those occupying a place of significance for an blind child. These significant others may include the parents, teachers, peers, principal of the school, relatives or others whom the blind consider to be significant for the fulfillment of his social, emotional and educational needs.

5. Notwithstanding all this, the review of literature also reflects that there are very few research studies with the blind children on their self-concept and self-esteem in the context of educational or school settings.

It was with these theoretical framework and perspectives coupled with the need and importance and rationale of the study, spelt out in chapter I of Introduction that the present study was designed. The research questions, objectives of the study, statement of the problem have already been described in chapter I. Hypothesis were also described in chapter I of introduction.

The present chapter deals with the method and procedure followed in carrying out this research work. It contains, methods of data collection, procedure and sample, tools used for data collection and statistical techniques used to analyse the data.

Method:

There are number of methods available for collecting the data and choice of any of these is determined by the purpose, objectives, nature of the problem, the nature of variables and the tools used in the study. Considering the nature of the problem an ex post facto field study was considered to be the appropriate. Field studies are aimed at discovering the relations between various psychological, sociological and educational variables in real social situations. These are conducted in real social situations like communities, schools, factories, organizations, the institutions and the like and systematically find the relations between variables. The one main
characteristic of field studies is that these are ex post facto i.e. the independent variables are not manipulated or manipulable or in other words the effect of independent variable on the dependent variable have already occurred. The task of the investigator is to systematically and scientifically assess that impact or effect on the dependent variables.

In the present study, since the objective was to find out the differences on self concept and self-esteem scores of blind children, studying in different educational settings, (the integrated and special school settings) the field study method was followed.

**Design of the study**

A number of research designs are employed in social research. The nature of problem, objectives of the study, nature of data, nature of sample, hypothesis and research questions all together determine the type of research design an investigator choses to carry out the research. The competence of the investigator and convenience also determine the choice of any particular types of research design.

According to Kerlinger (1964) "research design is the plan, structure and strategy of investigation conceived so as to obtain answers to research questions and to control variance. The plan refers to the overall scheme or programme of research. The structure of the research includes outline, the scheme, the paradigm of the operation of the variables. And strategy includes the methods to be used gather and analyze the data".

Research designs enables the researcher to seek answers to research questions as validity objectively, accurately and economically as possible. Thus the basic purposes of research design is to provide answers to research questions and control the variance of all types i.e. experimental, extraneous, and error variances.
Keeping in mind all these aspects and the nature of the present study a two group (matched) ex post facto research design was considered to be the most appropriate one for the present study. In ex post facto research treatment cannot be manipulated, because the effect of independent variables on the dependent variables have already occurred. In this study also, the effect of the two independent variables i.e. integrated school settings and special school settings had already occurred on the two dependent variables, i.e. self-concept and self-esteem. However, to get the scores on the two variables purely due to these two independent variables it was considered appropriate to control the extraneous variables such as age, sex, IQ and SES by matching the two groups on these variables.

A figurative presentation of the design is given in the following table.

**TABLE 3.1.**

Design of the Study

<table>
<thead>
<tr>
<th>Independent variable: $X_1$, $X_2$</th>
<th>Dependent variables: $Y_1$, $Y_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated school settings $X_1$</td>
<td>$X_1$</td>
</tr>
<tr>
<td>Special school settings $X_2$</td>
<td>$X_2$</td>
</tr>
</tbody>
</table>

Here $X$ means that the independent variables, here the integrated school settings $X_1$ and special school setting $X_2$ are not manipulated or are not manipulable or in other words are not under the control of the investigator. The blind students were already enrolled and studying in these two different types of school settings. The effect of these two independent variables on the two dependent variables $Y_1$ and $Y_2$, i.e. self-concept $Y_1$ and self esteem $Y_2$ was assumed or imagined. However, as stated earlier the two groups consisting of blind students studying
in integrated and special school settings were matched on age, sex, I.Q and SES. Thus the research design shall be presented as follows:

Here \( M \) denotes that the two groups are matched on certain variables.

**Variables**

“A variable is a symbol to which numerals or values are assigned. It is a property that takes on different values or putting it redundantly, a variable is something that varies (Kerlinger, 1964).

Variables can be classified in several ways Kerlinger (1964) have classified these into three categories: (a) independent and dependent variables (b) active and attribute variables, and (c) continuous and categorical variables. A brief discussion here is important so as to be clear about the distinction between different kinds of variables used in the present study. This is also important because it helps in conceptualizing and designing the research and in communicating the results of the study. First the independent and dependent variables “An independent variable is the presumed cause of the dependent variable, the presumed effect. The independent variable is the antecedent; the dependent is the consequent.” (Kerlinger, 1964). The independent variables are manipulated or controlled by the examiner to see the relationship that may exist with the dependent variables or the effect these may have an dependent variable. Dependent variables on the other hand are not manipulated by the investigator. Rather it is observed to see the variation as a presumed effect of independent
variable. "This variable is predicated to, whereas the independent variable is predicted from" (Kerlinger, 1964). Another category of variable is the active and attribute variables. An active variable is one which is manipulated or is manipulable, on the other hand attribute variable is one which is not manipulated but measured. All human characteristics such as intelligence, aptitude, sex, socio economic status, education, attitudes, age etc. are attribute variables, i.e. they are ready made or inbuilt or inherent qualities of human beings. They are already manipulated. But some of the attribute variables can also be active variables depending upon the situation and purpose of the study. Thus the distinction between these two is flexible. A distinction which is very useful in the planning of research and the analysis of data is between continuous and categorical variables. Continuous variables are those which takes on an ordered set of values within a certain range i.e. the measures of these variables yield a continuous score or a rank order. Categorical variables belong to a kind of measurement that is nominal or the variable which can be categorized into one or more sets or subsets. These variables have simple requirement that all members in a category or subset are same and are assigned the same numeral.

This is with this understanding that the variables in present study have been categorized and treated accordingly.

(A) **Independent variable**: Different educational setting, i.e. integrated school setting and special school settings are two independent variables in the study.

(B) **Dependent variable**: Self concept and self esteem scores of blind students studying in integrated and special school settings are the two dependent variables in the study.

(C) **Attribute variables**: By applying the definition of attribute variables described just in this section, sex, socio-economic status, and age and I.Q of blind students in both the educational settings, are treated the attribute variables.
However, these attribute variables were also treated as extraneous variables which were presumed to produce variance in the dependent variables. Therefore, the two groups were matched for these variables to control the variance.

It will be seen here that the self concept and self esteem are also continuous variables, i.e. the scores obtained on these two measures are continuous. Whereas the two independent variables, i.e. special school setting and integrated school settings are categorical variable.

Sample and Sampling:

Two types of sampling procedures were adopted in the selection of subjects for the study. These were as follows:

1. Purposive cum convenience sampling procedure at the stage of selection of schools. meaning thereby that all the schools and institutions having blind students in the age group of 14 and above years, for integrated education were selected and all the blind students in the age group specified above were selected to constitute the one group.

2. Stratified and random sampling procedure was adopted while selecting the blind students from the special schools. As mentioned earlier all the blind students in the age group of 14 years and above were selected from the schools and institutions having integrated education and equal number of an age, sex, SES and intelligence were selected from the special schools. The students from special schools were randomly selected to age appropriation and administered the intelligence and SES tests to match them with their counterparts in integrated school settings. This procedure was continued till the match for all the blind students in integrated school settings was found.
Thus the sampling procedure produced 52 pairs of blind students and this constituted the sample of the study. The characteristics of the sample are described in the following table.

Table 3.2

Characteristics of Sample

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Integrated School (N = 52)</th>
<th>Special Schools (N=52)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys (30)</td>
<td>Girls (22)</td>
</tr>
<tr>
<td>Age range (in years)</td>
<td>14.2-18.8</td>
<td>14.1-20.2</td>
</tr>
<tr>
<td>Mean age</td>
<td>16.84</td>
<td>16.65</td>
</tr>
<tr>
<td>SD</td>
<td>1.128</td>
<td>1.49</td>
</tr>
<tr>
<td>Intelligence Mean</td>
<td>71.77</td>
<td>61.59</td>
</tr>
<tr>
<td>SD</td>
<td>5.129</td>
<td>6.86</td>
</tr>
<tr>
<td>SES Mean</td>
<td>13.43</td>
<td>12.68</td>
</tr>
<tr>
<td>SD</td>
<td>6.834</td>
<td>6.26</td>
</tr>
</tbody>
</table>

It is evident from the above table that the differences in means age, intelligence scores and SES of the two groups are not much. Also the comparative standard deviations on these variables of the two groups are very small, indicating that the two groups are quite matched and equalised by the one to one or student to student matching method adopted in the study.

The sample was drawn from different schools in Delhi providing integrated as well as special education to the blind students. The distribution of sample as drawn from different special and integrated schools is presented below:
Table 3.3

Distribution of sample (school wise)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of Schools</th>
<th>Sample</th>
<th>Type of Educational settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>J.P.M. School for Blind (Boys), Blind Relief Association, Mathura Road, New Delhi.</td>
<td>30</td>
<td>Special School setting</td>
</tr>
<tr>
<td>2.</td>
<td>Rashtriya Brijanand Senior Secondary Kanya Andh Vidalaya</td>
<td>22</td>
<td>Special school setting</td>
</tr>
<tr>
<td>3.</td>
<td>Rajindera Prasad Sarvodaya Senior School, President Estate, New Delhi.</td>
<td>16</td>
<td>Integrated school setting</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>104</strong></td>
<td></td>
</tr>
</tbody>
</table>

It is worth to mention here that the blind students in NAB, R.K. Puram used to go to different public as well as Govt. run schools in Delhi for integrated education. These school include Sardar Patel Senior Secondary school Akshay Pratisthan; Saraswati Bal Mandir, Nehru Nagar, and Mehrauli; president Estate, Delhi Public School, UPRAS and St. Mary Public School.

Matching Of Subjects:

The two group of blind students, one from integrated school setting and the other from special school setting were matched for age, sex, I.Q on and socio-economic status. Student to student or one to one matching method was adopted for this purpose. Purpose of matching the subjects was to control the variance, these extraneous variables would have
produced. In other words effort was to minimize, nullify and isolate the influences of these variables on self-concept and self-esteem. Coupled with randomization, another method of controlling or minimizing the influence of extraneous variables, matching in this study purported to achieve this aim. The rationale of matching was provided by the results of a number of studies which have shown these variables to be related positively with the self concept and self esteem. This is one of the most important condition for matching as according to Kerlinger (1964) "the variable on which two subjects are matched must be fairly substantially related to the dependent variable or the matching is a waste of time." In this study also it was presumed that the sex, age, I.Q and socio-economic status of the subjects may influence the scores on self concept and self esteem instruments. Therefore, it was considered imperative to control the effect of these extraneous variables so as to get the scores on the dependent variables independent of these extraneous variables. This assumption was in fact based on earlier researches with these variables and dependent variables under study, which found them to be significantly correlated. Osborne and Legette (1982), for example in a study investigated sex, race, grade level and social class differences in self concept and found domain specific significant differences among boys and girls. Boys were found to be significantly higher on self concepts of physical appearance and anxiety than girls. Girls had better self concept for behavior and social dimension of self. There were not significant gender differences on global self concept. Fallett, Kay Ellen (1991) also in a study to investigate the relationship between self concept esteem and gender, age of onset and visibility of disability in physically disabled adults found gender significant gender differences in the level of self esteem. Watkins et al. (1997) also found age and gender differences in self esteem of children. In another study by Maria Jose Sotelo (2000) with 64 boys and 61 girls of a Spanish secondary school students, boys were found to be higher than girls on global self Esteem. But in other domain
specific self concepts, i.e. self criticism, identity, self, satisfaction, behavior, physical self, personal self, family self and social self, no significant differences were found. In a very recent study conducted by Kevin and Mzobanji (2001) on 816 South African students constituting 450 male and 300 female, with mean age 18.21 years (SD: 1.40) from eight senior secondary schools in the Province of the Eastern Cape and in the Western Cape province, it was found that male were significantly higher on perception of their physical abilities, emotional stability and relations with peers. Females had significantly higher scores on perceptions of their music abilities. There were age differences also (there were three age group: 14-17, 18-19 and 20-24 years) as the results shows that the youngest female group had significantly higher scores than the oldest group in perceptions of their interest in and enjoyment of school, relations with their families and their health. Also youngest female had more positive perceptions than did those in the middle age group of their physical appearance, their music abilities, relations with their peers and their health. Older female group had significantly higher scores on emotional maturity dimension. Young male were found to be having more positive perception of their interest in and enjoyment of school than did those in the oldest group. Old male group had stronger perceptions of their physical abilities than the youngest group. Male in the middle age group had more score on emotional maturity. Finally, male had a more positive global self concept than the females. With regard to intelligence as it relates to self concept and self esteem, although there is not much evidence to suggest that these are directly related, still many a research studies (Brookover, Paterson and Thomas, 1962, Jones and Storwig, 1968; Colangelo and Pfleger, 1978; Allen Ross, 1980; Kevin Kelley and Nicholas Colangelo, 1984); have demonstrated a relatively strong (r=.50) positive correlation between academic self concept and academic performance in schools. In a very comprehensive study Colangelo and Pfleger using Brookover’s Self-Concept of Abilities Scale with gifted students (grades: 9-12) concluded
that "students recognized as gifted are aware of their academic abilities and have developed self concepts consistent with their awareness and past successes." Kevin Kelly and Nicholas Colangelo (1984) also in a study with 266 (145 males and 121 females) comprising 90% of the total population of a consolidated junior high school (grades 7-9) from six rural communities and grouped by ability level into gifted, general and special students, determined by WISC - R IOWA Tests of Basic Skills, found that gifted students had significantly higher academic and social self concepts compared to non-gifted age mates. A definite relationship was found between academic ability and academic and social self concepts. The results were in consistent agreement with earlier studies conducted on gifted children (Colangelo, and Pfleger, 1978; Ross and Parker, 1980 and Tidwell, 1980) with regard to socio-economic status, another extraneous variable presumed to influence the self concept and self esteem of children, particularly the blind students in this study, a member of research evidence shows significant relationship between these variables. Collins, M (1993) using data of National Education Longitudinal study collected among white and black Hispanic youth found racial context, socio-economic status, academic performance to be positively related with self esteem of the youth. Farmer, D.W (1994) also in a study of relationship between children's self concept, related father's variables and family structure, conducted on biological fathers and their children (grade: 4 through 6) found a strong relationship between these variables and self concept of children measured on Piers - Harris children's Self-concept Scale. Maternal variables are also related with the self esteem of their children is evidenced from the results of a research study conducted by Ginsbrig (1994) on 71 male and 10 female (aged 8-21 years) disabled children in which he found that child's perception of material acceptance to be significantly related to the disabled child's self esteem (r = .55, p<.01). In general, adolescents from lower socio-economic status families
have however self concept and self esteem than those from higher status families, since membership in a disadvantaged group often has an important influence on these variables.

However, this is not say that socio-economic status of the parents by itself produce low or high self-esteem children. There may be other factors also interacting in between which may determine the development of self-concept and self-esteem. Lower class, low income families do produce high self-esteem children if the parent's self-esteem is also high (Coppersmith, 1968). Still there is no denying the fact that this variable also affects the self-concept and self-esteem of children to a greater extent.

Thus review of above mentioned research evidence suggest that age, sex, socio-economic status and IQ of children are important factors which influences the dependent variables of this study i.e. self concept and self esteem. To eliminate and minimize the variance produced due to influences of these variables it was considered imperative to match the two groups on these variables so as to get the scores on self concept and self esteem purely due to the effect of two independent variables, i.e. integrated and special school settings.

Tools Used in the study:

1. Personal Information Blank : (Self developed)

2. Socio-Economic Status Scale: Developed by Kuppuowamy

3. Self Esteem Inventory (Developed by G.P. Thakur and MS Prasad)

4. Self Concept Questionnaire (Developed by R.K. Saraswat).

5. WAIS - R: (Adapted by T.B. Singh).
1. **Personal Information Blank**: To obtain information on certain demographic variables, a personal information blank was developed by the investigator. It tapped information on the following.

a) **Age**: It was operationalised as the chronological age of the individual.

b) **Sex**: It was operationalised as the biological characteristics of the individual. Two categories of sex in the blank were male and female.

c) **Disability**: It was operationalised as the visual impairment.

d) **Degree of disability**: It was operationalised as the total functional loss, or totally blind.

e) **Age at the onset of disability**: To ascertain whether the child is adventitiously or congenitally blind, the chronological age at which disability occurred was noted down.

f) **Educational Qualifications**: The class or standard of the child in the school was considered his educational qualification.

g) **No. of years in the present setting or school**: It was operationalised as the no. of calendar years of the school, i.e. session the subject has been enrolled on.

i) **Educational level of Father**: It was operationalised as the educational level passed by the father of the subject.

j) **Educational level of mother**: It was operationalised as the educational level passed by the mother of the subject.

k) **Income of parents**: It was operationalised as total Income of Rupees received through all sources per month by the parents of the subject.
l) Occupation of father: It was operationalised as the actual work or job performed presently by the father of the subject.

m) Occupation of mother: It was also operationalised as the actual work or job performed presently by the mother of the subjects.

**Socio Economic Status Scale (Urban):**

Several attempts have been made abroad as well as in India to develop a scale to measure social prestige and status of individuals using a number of criteria. Taussig, for example long age tried to build up a scale on the basis of income. Many others used standard of living, occupation, educational level, facilities at home etc. as the criteria to assess an individual's socio-economic status. The present scale by Kuppuswami used in the present study is composite and comprehensive assessment of SES in the sense that it contains all the ingredients and criteria used so far by other authors and investigators. The scale was standardised primarily for use in socio-economic investigations in urban parts of India. The scale has two forms A and B. Form A may be used as a schedule to be completed by the investigator by asking questions especially in the case of illiterate persons or the subjects themselves. Form B requires the students in schools and Colleges to fill up the particulars regarding their parent's or guardian's. The inventory is self explanatory. The various items relating to education, occupation and income may be completed.

**Scoring**

Scoring of the scale is done by giving weightages to different items in the following manner.

**Items Weightages**
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**A. Education**

1. Professional degree or Hons. MA and above : 7
2. B.A., or B.Sc. or B.Com : 6
3. Intermediate or post high school Diploma : 5
4. High school certificate : 4
5. Middle school Completion : 3
6. Primary School or literate : 2
7. Illiterate : 1

**B. Occupation**

1. Professional : 10
2. Semi Professional : 6
3. Clerical, Shop Owners, Farm Owners : 5
4. Skilled worker : 4
5. Semi Skilled Worker : 3
6. Unskilled Worker : 2
7. Unemployed : 1

**C. Income**

1. Above Rs. 2000 per month : 12
Since the scale was developed 40 years back and presently the income pattern has changed quite drastically the categories of income and weightages given to each were changed accordingly and accommodate the present income structure which is as follows.

<table>
<thead>
<tr>
<th>Income Range</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above Rs. 5000 - 7000/-</td>
<td>12</td>
</tr>
<tr>
<td>Between Rs. 5000 - 7000/- p.m.</td>
<td>8</td>
</tr>
<tr>
<td>Between Rs. 4000 - 5000/- p.m.</td>
<td>6</td>
</tr>
<tr>
<td>Between Rs. 2500 - 4000/- p.m.</td>
<td>4</td>
</tr>
<tr>
<td>Between Rs. 1500 - 2500/- p.m.</td>
<td>3</td>
</tr>
<tr>
<td>Between Rs. 500 - 1500/- p.m.</td>
<td>2</td>
</tr>
<tr>
<td>Between Rs. 500/- p.m.</td>
<td>1</td>
</tr>
</tbody>
</table>
Score Card

The score card summarizes the information obtained in the scale for purpose of finding out the status score of an individual. The various categories are formed on the basis of the total score obtained which are as follows:

<table>
<thead>
<tr>
<th>Total Score</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>26-29</td>
<td>I</td>
</tr>
<tr>
<td>16-25</td>
<td>II</td>
</tr>
<tr>
<td>11-15</td>
<td>III</td>
</tr>
<tr>
<td>5 - 10</td>
<td>IV</td>
</tr>
<tr>
<td>below 4</td>
<td>V</td>
</tr>
</tbody>
</table>

Self Esteem:

Self Esteem inventory by G.P. Thakur and M.S. Prasad was used after adaptations for use with the blind children in the present study only, to assess self-esteem of subjects. The inventory was employed for the consideration that it takes into account both the personally perceived and socially perceived self, the aspect which other inventories lack to some extent. Since the self evaluation of the individual is heavily dependent upon the way in which he thinks others view him, it was quite appropriate to assess the self esteem from this perspective. The social psychological interactive nature of self esteem had already been described in chapter I of Introduction. The concept of self esteem put forward by the authors of this inventory, is the one adopted in the present study also. The inventory also qualify the prerequisite of selecting a tool, i.e. reliability and validity. The inventory has a fairly high
reliability of 0.82 for personally perceived self and .78 for socially perceived self. The test retest reliability calculated after a gap of six weeks was .69 for the personally perceived self and .66 for the socially perceived self.

The inventory contains 30 items out of which 17 are socially desirable and 13 are socially undesirable. It has two parts and both the parts contain the same items or questions. The difference being in instructions orientated to assess the self esteem from the personal perspective in part – I and from other’s perspective in part – II.

Scoring: As mentioned earlier the inventory contains 30 items out which 17 are socially desirable and 13 are socially undesirable. The responses of an individual to a particularly question are ranked on 7-point scale, i.e. The items which are socially desirable would get a score of 7 if marked or answered completely true and 1 if answered completely false. Other intermediate answer would get scores accordingly. The socially undesirable items would be secured in the opposite manner. Answer to those items would get a score of 7 if answered completely false and score of 1 if answered completely true. In both parts of the inventory the same method of scoring is followed. Scores on both the parts are summated separately and thus the following three possibilities would emerge:

A) Personally perceived scores in part I may be higher than the socially perceived scores in part II of the inventory. This indicate more positive self-concept and high self-esteem.

B) Personally perceived scores in part I may be lower than the socially perceived self in part II of the inventory. This would indicate a lower or negative self-concept and low self-esteem.
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C) There may be no difference between personally perceived self scores in part I and the socially perceived scores in part II of the inventory. This would indicate a balance self-esteem.

Self – Concept Questionnaire

Self-concept questionnaire developed by R.K. Saraswat was employed to assess the self-concept of blind students. This questionnaire was also adapted for use with the blind students in the present study only. This questionnaire was chosen because it measures not only the global self-concept but also provides domain specific self-concepts scores. The following dimensions of self-concept are measured in the questionnaire.

A) Physical self-concept: This refers to an individual’s view of their body, health, physical appearance and strength and include items no’s 2, 3, 9, 20, 22, 27, 29 and 39 of the questionnaire.

B) Social-Self-concept: This indicate an individual’s sense of worth in social interactions. The item nos. 18, 21, 37, 40, 43, 46 and 48 of the questionnaire measure this aspect.

C) Temperamental self – concept: This refers to an individual’s view of their prevailing emotional state or predominance of a particular kind of emotional reaction. Item nos. 4, 10, 14, 16, 19, 23, 24 and 28 of the questionnaire measure this aspect.

D) Educational self-concept: Item no’s 5, 13, 15, 17, 25, 26, 30 and 32 in the questionnaire measures an individual’s view of themselves in relation to school, teacher and extra curricular activities.
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E) Moral self-concept: It refers to an individual’s estimation of his moral worth, judgement of right and wrong activities. Item nos’ 6, 34, 35, 41, 42, 44, 45 and 47 are included in the questionnaire to measure this aspect.

F) Intellectual self concept: This aspect which is measured by item nos’ 7, 11, 12, 18, 33, 36, 38, and 39 in the questionnaire refers to an individual’s awareness of their intelligence and capacity of problem solving and judgements.

There are total 48 questions in the questionnaire and each are answered on a five point scale by putting a tick (✓) in the blank space given against each choice. No time limit is specified for completing the questionnaire.

The questionnaire was selected and preferred over other questionnaires and scales available for the purpose of assessing the self-concept, due to high test retest reliability and content and construct validity. The test retest reliability of the questionnaire was found to be .91 for the total or global self-concept. The reliability coefficients of its various dimensions are also calculated as follows:

(A) Physical self-concept : .71

(B) Social self : .83

(C) Temperamental Self concept : .79

(D) Educational self concept : .88

(E) Moral self concept : .67

(F) Intellectual self concept : .79
Thus it is apparent that the questionnaire has a fairly high reliability not only for global or total self concept scores but also for its various dimensions. Only the moral dimension has somewhat few reliability coefficient.

The contents and construct validity of the questionnaire were also established by obtaining the experts opinion of 25 psychologists. Who classified all the items to different dimensions of self concept. Item on which highest number of experts, i.e. not less than 80% agreed were retained and selected in the questionnaires and were assigned to that particular dimension or category to which it was recommended by experts. Thus the questionnaire is considered to have both content and construct validity.

Age (14-18 years) and grade norms for each dimension and total or global self concept, calculated on a sample of 1000 normal school students from Delhi Administration were also established and are given in the following table no. 3.2

Table: 3.3

Norms on Dimensions and total self concept scores.

<table>
<thead>
<tr>
<th>Level of self concept</th>
<th>Range of Score on Dimensions of self concept</th>
<th>Range of score on total self concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>High self concept</td>
<td>33-40</td>
<td>193-240</td>
</tr>
<tr>
<td>Above average self concept</td>
<td>25-32</td>
<td>145-192</td>
</tr>
<tr>
<td>Average self concept</td>
<td>17-24</td>
<td>97-144</td>
</tr>
<tr>
<td>Below average self concept</td>
<td>9-16</td>
<td>49-96</td>
</tr>
<tr>
<td>Low self concept</td>
<td>Upto 8</td>
<td>1-48</td>
</tr>
</tbody>
</table>
Scoring:

This questionnaire measures an individual’s self concepts on a five point scale with the scores ranging from 5-1, i.e. the most acceptable response marked on point gets a score of 5 and the least acceptable response or answer gets a score of 1. The intermediate responses get scores accordingly. For example if the individual to a question “what type of teeth do you have” mark his choice on ‘beautiful’ on the five point scale ranging from response choices of ‘very beautiful’ beautiful, average, beautiful, and ‘beautiful at all, he would get a score of 2 and like that. The scores of each dimension are obtained separately and entered into the score sheet. By Summating these scores would give a score of total or global self concept.

WAIS-R Verbal Scale for Visually Handicapped

This test of intelligence measurement was used for matching the two groups. Although one or two intelligence tests for visually handicapped are available for Indian population like Vinoba Pakniker Performance Tests, but these does not bear desired level of psychological properties (Singh, 1986). That the intelligence testing of blind children should be done with great precision and with a greater assurance on the part of the validity of a test used was noted by Warren (1978) in a review of studies on early development of the child and its related areas. He noted that a test widely used for the sighted children must not be taken for granted to be a valid test for the blind children also.

Recognising this and other aspects Singh (1986) undertook a project sponsored by NIVH Dehra Dun to adapt the short form for measurement of WAIS-R for Indian blind population. Earlier WAIS-R Verbal scale had been standardized on a sample of 352 Hindi speaking sighted subjects of North India by Verma et al (1983) in a multi centered research project.
Four subtests i.e. information, digit span, arithmetic and comprehension were standardized and reliability and validity of this scale were assessed, which were found to be quite satisfactory. Construct validity was computed using normal and psychiatric patients as subjects. Bhatia Battery of performance test, Weschler Adult performance intelligence scale (Ramalingaswami, 1975), Ravens standard progressive Matrics and vocabulary subtests of Standford Binet Scale (Kulshareshtra 1971) were used to compute concurrent validity. High correlation was found between the scores obtained on WAIS-R and these tests.

On the basis of an exhaustive review of studies in the area of intelligence testing of blind persons, Singh (1986) observed that "most of the researchers used verbal tests more confidently and the various areas explored with the help of these tests give us useful insight. Structure of cognitive abilities (Miller, 1977), prediction of vocational success, relationship between intelligence and mastery of mobility skills (Lehan, 1972) educational and occupational achievement (Suinn, et. al. 1967) were the areas which justify the use of a suitable test development in the Indian context and may help in psycho educational assessment and in the evaluation of training and rehabilitative measures."

Thus keeping in mind the need for the development of a reliable and valid test for intelligence measurement of visually handicapped population in India Singh (1986) selected WAIS-R. As mentioned earlier Hindi WAIS-R had already been developed and standardized in India by Verma et. al. (1983) on sighted population. In this four subtests – information, digit span, arithmetic and comprehension were used. But for it standardization on visually handicapped population Singh (1986) included the similarities subtest also.

Test retest and split half reliability of the test was found to be quite satisfactory and are given for each subtest in tables mentioned below:
Table No. 3.4

Co-efficient of stability (Test-retest reliability) of Hindi WAIS-R verbal for VH

<table>
<thead>
<tr>
<th>Subtests</th>
<th>Present study</th>
<th>Verma et al (1983)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Test</td>
<td>.82</td>
<td>.98</td>
</tr>
<tr>
<td>Information</td>
<td>.94</td>
<td>.97</td>
</tr>
<tr>
<td>Digit Span</td>
<td>.92</td>
<td>.87</td>
</tr>
<tr>
<td>Arithmetic</td>
<td>.83</td>
<td>.95</td>
</tr>
<tr>
<td>Similarities</td>
<td>.81</td>
<td></td>
</tr>
<tr>
<td>Comprehension</td>
<td>.86</td>
<td>.94</td>
</tr>
</tbody>
</table>

Test retest reliability coefficient was computed after a gap of 6 weeks and as shown in the above table these were found to be very high in comparison to the found by Verma et al. (1983) with sighted Hindi speaking population. Education wise split-half reliability was also established for total scale and each subtests included in it. There are given in the following table.
Table: 3.5

Education wise split-half reliability of Hindi WAIS-R for VH

<table>
<thead>
<tr>
<th>Education</th>
<th>Information</th>
<th>Digit span</th>
<th>Arithmetic</th>
<th>Similarities</th>
<th>Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5 N=33</td>
<td>.88</td>
<td>.92</td>
<td>.88</td>
<td>.97</td>
<td>.31</td>
</tr>
<tr>
<td>6-9 N=33</td>
<td>.79</td>
<td>.93</td>
<td>.90</td>
<td>.86</td>
<td>.22</td>
</tr>
<tr>
<td>10+ N=34</td>
<td>.75</td>
<td>.90</td>
<td>.96</td>
<td>.87</td>
<td>.54</td>
</tr>
<tr>
<td>Total</td>
<td>.85</td>
<td>.92</td>
<td>.91</td>
<td>.92</td>
<td>.31</td>
</tr>
<tr>
<td>N = 100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

It may be noted here that except comprehensive sub test the split half reliability for the other subtest were found to be quite satisfactory.

The original Hindi WAIS - R verbal scale (for sighted) was validated against various available tests like Stanford Progressive Matrices, Weschler Adult Performance Intelligence Scale (Indian adaptation), Bhatia Battery of Performance Tests (short scale) and Stanford Binet Intelligence Scale (Vocabulary subtest), and all the correlations were found to be high positive (Verma, et. al. 1983). The present test developed for Hindi speaking visually handicapped population was validated against Mohsin's verbal test for general intelligence (Mohsin, 1964). The scores of two tests correlated highly with each other giving a coefficient of .887.

Agewise and education wise norms for the visually handicapped population work also calculated. Norms for the age range of 16-55+ and education range from 0 - 10+ are also available.
The above mentioned aspects provided the criteria for selecting this test for matching the two groups on intelligence. In addition to these, Singh (1986) while developing this test cited the following reasons for selecting this test:

a) "This scale does not favour the fixed notion of intelligence and identifies intelligence as global capacity;"

b) It was found useful for the upper age group people and comprehensibly much better assessment along with profile study was possible with WAIS – R;

c) Use of point scale for calculating mental age, was replaced by WAIS;

d) WAIS – R provides facility for profile study of subtest scores. This gives an idea in which test the ‘I.Q’ is at his best, average or worst.

e) WAIS – R being an I.Q. measure is also diagnostic in nature.

f) WAIS – R Verbal has been adapted and standardized on 3,572 Hindi spreading population (Verma, et. al. 1983),

g) WAIS – R has been rated as the first among the few technically sound and highly used psychological tests so far as psychometric refinement is concerned (Reynold and Sandberg, 1976); and

h) On the basis of a number of studies, use of the Verbal Scale of WAIS has been recommended as valid short form IQ measure, stressing the fact that use of Verbal scale does not involve any change in its standard administration procedure".
Scoring:

Scoring of this test is done according to the standard laid down for the original standardized Hindi WAIS-R Verbal scale by Verma et. al. (1983). In the information subtests there are 35 questions and each correct answer gets a maximum of 1 score, thus totaling a maximum of 33 score. In the Digit span sub test score of 2, 1, or 0 is given depending upon the correctness of response. A maximum score of 14 for forward and 14 for backward digit span, a subject may get. The arithmetic subtest contains 15 questions and each correct answer get a score of 1, and a maximum of 15 for the whole subtests. Similarities contains 12 questions and each correct answer get a score of 2 thus a maximum of 24 for the whole sub test. Similarly comprehension subtests contains 18 questions and each correct answer get a score of 2 and maximum of 36 score can be obtained by the subject.

Adaptation of Self-concept Questionnaire and Self-Esteem Inventory

Since these instruments were developed for the use with the normally sighted population, it was decided and thought to be necessary to adapt these two for the blind students so as to elicit the appropriate answer true to the characteristic of a blind child’s self-esteem and self-concept. For this the language of some questions in both the instruments, which were considered to be inhibiting to the subjects to answer appropriately, were changed after consultation with experts in the field of visually handicapped. The expert opinion thus obtained and the language or words as suggested by these experts was adapted and the instruments thus were reworded. The language of the instructions in both the instruments were also reworded and adapted in the same manner so as to make these more suitable, easy and comprehensive for the blind children. It was ascertained that only that language or words
were retained on which more than 80% of experts agreed. After these changes, both the instruments were transcribed into Braille for use with the blind students.

Initially in pilot study both the instruments were administered to 15 blind students drawn from J.P. M. School for blind, Blind Relief Association, Mathura Road, New Delhi. The students were selected randomly from different classes, with age range 14-18.6 (mean age: 16-47).

After a gap of 4 weeks both the instruments were again administered to the same students and correlation coefficient was calculated between the scores of both time administration, for both the instruments, to determine the test retest reliability, which was found to be very high for both the instruments. Correlation Coefficient was also calculated for different dimensions of self-concept questionnaire. The r – values are given in tables nos'.

Table : 3.6

Reliability coefficient r values for self-concept questionnaire.

<table>
<thead>
<tr>
<th>Test / Sub – test</th>
<th>t – Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self – Concept (total)</td>
<td>.88</td>
</tr>
<tr>
<td>Physical Self-concept</td>
<td>.70</td>
</tr>
<tr>
<td>Social Self – concept</td>
<td>.75</td>
</tr>
<tr>
<td>Temperamental Self-concept</td>
<td>.79</td>
</tr>
<tr>
<td>Educational Self-concept</td>
<td>.74</td>
</tr>
<tr>
<td>Moral Self-concept</td>
<td>.82</td>
</tr>
<tr>
<td>Intellectual Self-concept</td>
<td>.88</td>
</tr>
</tbody>
</table>
Table 3.7

Reliability Coefficient r - Values for Self Esteem Inventory

<table>
<thead>
<tr>
<th>Test / Sub - test</th>
<th>r - Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self - Esteem Inventory (part - I)</td>
<td>.70</td>
</tr>
<tr>
<td>Self Esteem Inventory (Part - II)</td>
<td>.74</td>
</tr>
</tbody>
</table>

Data Collection

After having matched the two groups of blind students, one studying in integrated and another studying in special school settings for age, sex, IQ and SES, the two tests, i.e. self-concept questionnaire and self-esteem inventory were administered to collect the data. The two tests were administered in a group of 5 each as these had already been transcribed into Braille. Scoring of each test was done as per manual of each test. For the self-concept questionnaire seven type of scores were obtained. Score for the full questionnaire indicating total or global self – concept; physical self-concept scores, social self-concept scores, educational self-concept scores, moral self-concept scores, temperamental self-concept scores and intellectual self-concept scores. For the self-esteem inventory three set of scores were obtained, i.e. personally perceived self, socially perceived self and scores of differences between the two determine the level of self-esteem.

Statistical Techniques used to Analyse the data

Since the purpose of the study was to compare the two groups on two dependent variables, i.e. self – concept and self – esteem, analysis of variance and t-test were considered to be the
appropriate statistical techniques to analyse the data. Mean and standard deviation of different groups were also computed. The two groups were compared by F test on global self-concept scores as well as on its subtests and personally perceived self, socially perceived self and scores differences between the two of the self-esteem inventory. In addition to E-ratio and components of variance were also computed to establish the contribution of variance in independent variables to the total variance to dependent variables.