

C H A P T E R III

METHOD AND PROCEDURE

CHAPTER-III

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3.1 INTRODUCTION

Since same terms were used to mean differently by different social scientists, the terms were defined by the researcher as she had taken them.

Aggression was taken as a behaviour towards an object, living beings (including human beings) or an activity, represented by a continuum starting from submission (no aggression) going through defense to assertion, extending to aggression (verbal or physical) and culminating in destructive hostility.

Self concept was taken as a cluster of most personal meanings a person attributed to the self. It included only those perceptions about the self which seem most vital or important to the individual himself. It was measured by "Who Am I" test scored on Sarabhai's scheme of scoring.

Achievement motivation was understood to be a drive to achieve certain goals. It is defined as "a

desire or tendency to do things as rapidly and independently as possible, to overcome obstacles and attain a high standard, to excel one's self to rivals and supercede others". It was measured by B.N. Mukherjee's forced choice sentence completion test of Achievement Motivation.

Performance is the extent of efficiency with which an individual performs a task. In the present study the performance is viewed from two different angles - the performance on curricular and on cocurricular activities, because the present day evaluation system of schools takes into account these two aspects of performance.

Academic Performance or the performance on scholastic subjects was conceived as the extent to which an individual achieves the academic goals set for that stage of academic ladder. These extents in school disciplines were evaluated by the board of education through public examination system and total marks obtained in percentage in the examinations were

taken as the academic performance.

Non Academic Performance or performance on cocurricular activities as taken by the researcher was the efficiency with which an individual performs a task assigned to him. It was the extent to which the individual achieved the cocurricular goals set by the schools in different activities. Since there is no provision in public examinations to evaluate this aspect of performance the qualitative judgments in quantitative terms by the teachers concerned with that particular activity, were taken as the evaluation of Non Academic Performance of the pupils. These cocurricular activities involve debate, elocution, public speeches, dramatics, mimicry, songs, instrumental music, dances, handicrafts, essay competitions, flower decorations, models, sports, games, exhibitions and any other activity carried out in the school in addition to the class-room instructions.

3.2 SAMPLE

The present study was a survey and was conducted in two stages. In first stage the try out of the aggre-

ssion scale constructed by the researchers was done and the second stage was the survey. The sample for the field survey was different from that of the tool construction sample. Details of sampling at both stage are given below separately.

3.2.1 Sample for tryout study :

This was done in two stages. The first tryout of the aggression scale was done on a sample of 130 students including boys and girls. The schools were selected purposively. The schools were Bharat Scout and Guide School and Dwarka Prasad Girls School of Allahabad. The medium of instruction in both the schools was Hindi. All the sections of VIII Standard of B S G School and all the sections of IX Standard of D P G S were taken in the sample, comprising total of 176 students but only 130 were selected for the purpose of analysis as the rest of 46 students did not complete the questionnaire.

TABLE-3.1

Distribution of subjects for tool construction:

Name of School	No. of Subjects		Average age in years.
	Male	Female	
D.P.G. School	-	50	14.8
B.S.G. School	62	18	

The second stage of tool construction was the administration of the final draft of the tool and then readministration of the same after 15 days to find out the validity and reliability of the tool. For this also the purposive sampling was used and 40 pupils with the average age of 15 years were selected from the previous sample. This administration was done only after one month so that the residual effect did not interfere. Readministration of the tool was done on the same sample after 15 days.

3.2.2 Sample for field survey:

The population for the study was from Allahabad all the regular students in government aided schools affiliated to U.P. Board and from Baroda all the regular students in government aided schools affiliated to Gujarat Board in standards XI and XII.

The sampling was two staged random sampling. For the purpose five schools of Allahabad and three schools of Baroda were selected randomly. Then the sections from these schools were again selected randomly. It was found that the sample included all the three

discipline groups viz. science, arts and commerce group.
The distribution of the subjects selected for final
analysis is shown below.

TABLE-3.2

School and classwise distribution of the subjects for
the final administration

S.No.	Allahabad			Baroda		
	Name of School.	XI	XII	Total	Name of School	XI XII Total
1.	St. Anthony's Convent GIC.	36	32	68	Zeinth School	38 32 70
2.	G.I.C.	72	28	100	Experimental School.	38 37 75
3.	D.P.G.I.C.	32	19	51	Adarsh Hindi School.	36 29 65
4.	Kesarwanil C.	51	25	76		
5.	J.T.G.I.C.	29	30	59		
T o t a l :		220	134	354		112 98 210

As is seen from the chart, there were total 564
subjects taken for the final statistical analysis. Others
were left because they had left one or the other tool
incomplete. The five schools selected from Allahabad

city were St. Anthony's Convent Girls Intermediate College (SAGGIC) Government Intermediate College (GIC) Dwarka Prasad Girls Intermediate College (DPGIC) Kesarwani Intermediate College (KIC) and Jagat Taran Girls Intermediate College (JTGIC). The total subjects from these colleges were 68, 100, 51, 76 and 59 respectively. The figures include boys and girls both. The schools selected in Baroda City were Zenith School, Experimental School and Adarsh Hindi School and the number of subjects from each were 70, 75 and 65 respectively.

The sexwise and discipline wise distribution of the subjects is given in table 3.3 below.

TABLE-3.3

Sexwise and disciplinewise distribution of the subjects

	M	F	Arts	Science	Commerce
Allahabad	175	178	137	157	60
Baroda	100	110	93	70	47

It is seen from the table that in the final sample

all the three disciplines were represented. Out of the total 354 subjects from Allahabad 137 belonged to Arts group, 157 to science group and 60 to commerce group and out of the total 210 subjects from Baroda 93 belonged to Arts Group, 70 to Science and 47 to commerce group.

3.3 DEVELOPMENT OF THE TOOL

The first stage was to develop a scale on which the level of aggression in adolescent could be measured.

3.3.1 Need for the development of tool:

In any of the studies that were done in India or abroad, the nature of aggression was always taken as a negative characteristic. Since in the present study aggression was taken as a behaviour represented on a continuum, there should be some tool which could measure the level of aggression. Any individual should be given the choice through which he would express the desirable amount of aggression without being labelled as one possessing any negative trait.

The present study described aggression as a behaviour on a continuum starting from no aggression i.e. submission going through self defence to assertion and aggression leading to destructive aggression. So the primary step was to develop a tool for measuring aggression.

3.3.2 Aims of the Tool:

It was assumed that most of the subjects would lie between more or less defensive category with a little number on assertive category as Indian culture does not encourage even much assertiveness. Since the subjects were the school going children, severe deviations were not likely to be present. Thus the aims of the tool were (i)

- (i) To provide different manifestations of aggression on different levels.
- (ii) To measure the level of aggression.

3.3.3 Nature of the Tool :

The tool is a scale in which different points are

specified by different statements instead of being specified by the degree to which the subject agrees or disagrees with the statement.

It is an objective type scale where different situations are provided with different possible behaviours in that situation and subjects are forced to choose one or the other alternatives provided.

3.3.4 Procedure:

- (i) The already available tools were studied thoroughly to get an idea of the situations in which possibility of eliciting an aggressive response existed.
- (ii) Consultation with the guide, experts and colleagues was done to formulate the situations.
- (iii) Some adolescents were asked to write short essays on the topics like "When I lost my temper", "When I felt like aggressing against authority" "..... against peer

groups". "When I felt like releasing my pent up anger" and similar titles. Around fifty such essays ranging from one para to half fullscape papers were thus obtained and classified according to the content. Essays generally contained one to two incidents instigating the aggressive behaviour.

After all these were done the researcher tapped her experiences also and pooling all together developed different situations. Under the situation, the incidents involving different groups were placed in terms of items, where the respondents were asked to express their choice of possible behaviour out of the alternatives provided, in order to have finally tied items depicting different degrees of aggression.

Under the above situation it was considered that 25 items would be enough for the purpose. For such a tool the first draft had to be a longer one. For that around sixty such items were considered enough by the researcher. Each item was provided with all possible manifestations of aggression in varying degrees. Therefore it was planned that finally selected items would

have five alternatives varying in degree of aggression. In order to do that, while developing the items, all possible behaviour in that situation were listed. In this way sixty such items were developed where the number of choices varied from 7 to 11. The researcher thought of tentatively assigning the above mentioned levels of aggression and identify the choices related to each of them for a given item. It was found that in some cases there were two or more choices for the same levels. In some other situations some choices were borderline cases to be kept in any of the five categories. In some other cases the researcher could not decide the level in which a particular choice fits in .

Hence there was no other way out to decide the suitability of these choices in relation to each level of aggression and to assign different score to each of them but to approach the experts who had significant knowledge and experience in the area for the help. The workability of the items, language, clarity and unambiguity for that particular group of adolescents were

taken care of, while the development of the items.

Thus the first final draft was prepared to be given to judges.

This draft was given to 20 judges with instructions to choose best five alternatives with varying degree of aggression to be kept in five different categories according to the score assigned to each of them. According to the frequency of each response selected by different judges the best five items were selected. Then these responses were to be assigned different scores ranging from 0,1,2,3 and 4 respectively to the five alternatives selected by them and again the final scores were given to each response for each item according to the frequency. The means of the scores were not taken as scores because each alternative was supposed to carry weights of integral numbers from 0 to 4. On the basis of the judgment of the experts. Thus the final draft for pilot study was prepared where 60 items were kept each item having five alternative responses and each response carrying different weight from 0 to 4 for each item. The responses for each

item were then randomly arranged in each item.

Since the tool was in Hindi the researcher selected the city Allahabad which is a Hindi speaking city. The final draft was stencil cut and cyclostyled. This cyclostyled scale was administered then on a sample of 130 pupils including boys and girls.

3.3.5 Validity :

To confirm the construct validity the researcher validated the scores of the rankings for the subjects on aggression given by their teacher. The researcher did not know the students so she prepared 4 copies each of the list of the names of the students participated in test. These copies were given to the teachers concerned. To make teachers ranking in terms of quantitative rating more valid the researcher chose from teachers to rate the students on aggression with a set of written instructions how and on what behaviour the teachers were supposed to rate the students. The teachers chosen were those who taught those students

for more than six months and had the occasion to observe them closely^{for}/a number of times. The teachers were supposed to give marks from 0 to 10 to all the students listed by the researcher. The marks to be given considering the amount of aggression the students showed on different occasions during the period the teacher had opportunities to observe them. To check the inter-rater reliability the researcher calculated Kendall Coefficient of concordance which showed that a high degree of agreement among teachers rating existed and was significant. Thus the researcher had solid reason to take average rating for all the subjects in question.

The correlation between the scores given by the teacher and the score obtained by the students on aggression scale was found to be .78. Hence, the scale was believed to be fairly valid to be used to measure the level of aggression in pupils.

3.3.6 Reliability ;

The test-retest reliability of the scale was found to be .87 for girls and .84 for boys. For this

purpose the readministration of the test was done after a time gap of 15 days. A section of the same students who appeared in pilot study, was selected for measuring the reliability of the test.

3.3.7 Item Analysis:

Item analysis was done for the selection of items in final test. For this, each item was analysed for its item-total correlation which should be positive and high .

For discriminating value the upper 27% students were taken out and for each item the 't' test was applied to see whether the value is significant. Significant 't' values indicate that the item discriminated between low and high aggression subjects. It was taken into account that the mean score for such items be higher in case of higher Aggression than that of lower Aggression group. The criterion of item-total correlation was considered and on the basis of the two/ ^{the items were selected. Out of} ~~these~~ 26 items, two were of same type with similar responses so one of them was taken as example in the scale. The

relevant table (3.4) is given below for both the criteria.

TABLE-3.4

't' values for discrimination between low and high aggression group and the 'r' values for item-total correlation.

Item No.	t values	r	Item No.	t values	r
1.	1.25	-0.017	31.	5.78**	-0.175
2.	3.24**	-0.335**	32.	3.33**	0.318*
3.	0.29	-0.098	33.	3.12**	0.400**
4.	0.19	0.113	34.	1.64	0.258
5.	3.61*	0.17	35.	4.38**	0.427**
6.	4.83**	0.375**	36.	3.05**	0.416**
7.	3.5**	0.21	37.	4.22**	0.468**
8.	2.21*	0.254*	38.	3.14**	0.239*
9.	5.77**	0.31**	39.	3.79**	0.459**
10.	2.47*	0.233**	40.	1.36	0.267*
11.	4.7**	0.424**	41.	3.43**	0.553**
12.	3.6**	0.247**	42.	6.42**	0.631**
13.	4.11**	0.27*	43.	2.62*	0.329**
14.	5.3**	0.491**	44.	0.31	0.094

1	2	3	4	5	6
15.	0.94	0.282*	45.	7.67**	0.558**
16.	1.39	0.147	46.	4.77**	0.439**
17.	5.77**	0.483**	47.	1.33	0.222
18.	3.87**	0.403**	48.	0.33	0.050
19.	1.36	0.163	49.	0.226*	0.310**
20.	0.47	-0.002	50.	2.38*	0.031
21.	3.43	0.584**	51.	0.69	0.234*
22.	5.48**	-0.047	52.	1.82	0.293*
23.	7.00**	0.566**	53.	2.44*	0.327**
24.	7.9**	0.550**	54.	3.1**	0.393**
25.	2.33*	-0.163	55.	2.17*	0.104*
26.	3.44**	0.365**	56.	0.69	0.057
27.	5.0**	0.412**	57.	1.52	0.185
28.	4.28**	0.469**	58.	3.48**	0.372**
29.	2.18*	0.503**	59.	3.59**	0.305**
30.	2.75**	0.268*	60.	3.88**	0.826**

* - Significant at .05 level.

** - Significant at .01 level.

The items having both the values positive and significance at .01 level were taken for the final draft.

The test is in third person^{form}, though during the development of the tool, the first person form also was prepared and administered on a very small groups, to see the workability of items. The time gap between the two administrations of the two forms was kept one week. The scores were almost the same and the students gave the same choices on both the forms of the scale. In two cases, scores on first person ~~form~~ were a little lower than those on third person form. It was assumed that the subjects had not shown a choice showing higher aggression (the difference being 1 to 2 points only) in first person form, because, in that, they themselves were on the scene and thus the social desirability effect crept in and they did not want to be identified as being aggressive.

The scale has both boys and girls in the different scenes describing different situations. Thus enough chances were given to both boys and girls to unconsciously

identify themselves in hidden forms of the individuals on the scene, and thus they could make their choices in each situation.

Scoring key was prepared while developing the items in the different tool. Each item had five responses, each differing in scores, ranging from 0 to 4. The nonresponses were deleted from the study for analysis purposes. The score zero tells absence of Aggression. The summated score was the score obtained by the subject.

3.4 ABOUT THE OTHER TOOLS USED:

Besides the aggression scale developed by the researcher, other tools were used to measure Self Concept, Achievement Motivation, Academic Performance and Non Academic Performance.

3.4.1 Self Concept :

Self concept was measured by Who Am-I test. This test was a semi projective type of test. It was an essay type test where subjects were asked to write about who they were . The stimulus given was very open and no set questions were asked in order to give any direction in writing the essay.

The selection of this test was based on the assumption of Pollard and Geoghegan (1969) that at adolescence the individual shapes a self concept that is positive honest and realist and can answer Erikson's question "Who am I".

This tool has been used by Hem Chaudhary (1980) with certain directional questions and, in addition, some other similar tests with sets of questions viz., my self any my home, myself and my studies, myself and my institution, myself and my community and myself and my nation were used. Chowdhary used the scoring system developed by Sarabhai (1976) based on Pizer's system of scoring. Sarabhai adopted the system in Indian context. The same system with slight modification was used here. The modification was necessary because the administration of the tool was done in a different way.

Sarabhai's scheme of scoring was followed, which divides the self concept into nine categories. Out of which, five are desirable ones and presence of these were marked plus 2 (+2) and four are undesirable ones and

the absence of which was given the credit of one point(+1), Thus making the maximum possible total of $(5 \times 2) + (4 \times 1) = 14$.

The difference made by the researcher was, that by the researcher mere mention of a goal by the pupil was given the credit of one mark(+1) which was not done by Sarabhai, because there the set questions were asked and one of them was What are your aims. In the category of Goal Directed Activity +2 marks were given if the mentioned goal was supported by some activity for that.

3.4.2 Achievement Motivation

The forced choice type sentence completion test of achievement motivation by B.N. Mukherjee was used by the researcher.

The tool in Hindi form was used by Lakhmi Singh (1980) for 16-17 years olds. This was found to be relevant in ^{the} present case also as the age range in the case of present study was from 15 to 19 years.

The test is an objective type test with one correct answer and two distracters thus making three

alternatives for each item. The tool was found to be valid and reliable.

The key is provided with the tool. Each item carries one mark which is to be given to the correct response. The summated score is the score obtained by the pupil.

- 3.4.3 Academic performance was measured directly by the marks obtained by the pupils in their public examination (which ever they appeared in) from the school records and thus no separate tool was required. The marks obtained by the pupils in their public examination were converted into percentages.
- 3.4.4. Non Academic Performance was measured by teachers' rankings.

Instructions were formulated for teachers asking them to give marks from 0 to 10 to each of the pupil listed (participating in the study). The table was prepared with different heads of different column cocurricular activities held in the school. The teachers were asked to give marks under the heading of the activity

for which they were in-charge. Wherever they were found fit to give assessment for other activities observed by a particular teacher, he was allowed to give points to the pupil for that activity also. The headings of different columns were Sports/Debate etc. Dance/Music, Drama, others. Here the debate etc, included public speeches, elocutions, seminars and symposium and drama included mimikry monoeact etc.(Appendix B).

The ratings were thus obtained for the subjects by their teachers looking after different activities carried out in the school/College. For that a format was prepared with instructions to teachers/person in-charge according to which they were supposed to rate the subjects giving different numerals ranging from zero to ten in each activity. The final scores were given by the average of different teachers ranking and of the different activities.

3.5 PROCEDURE OF DATA COLLECTION

The researcher randomly selected the schools in which she was to go for data collection. She met the principals/administrators of the schools selected and

told them about the purpose of her visit. They agreed to make the classes required, available to the researcher and deputed some teachers to help the investigator. She then took the previous appointment and on the appointed date and time went to the school with all her tools. The classes also were selected randomly and it was found that total sample comprised of the three main groups of science, arts and commerce. Then the classes were taken as clusters and it was previously informed to the principal/administrator of the school/college concerned which class and section the investigator needed.

The tools were administered with the help of the teachers available. All the three tools were given to the pupils on the same day. This was done as a precaution to have same pupils for all the three tools. The tools were not the lengthy ones and it was assumed that the tiring effect would be negligible .

This was repeated with all the schools/colleges/ classes. Then the names of the pupils participated in the test were listed. These lists were given, to other teachers for ratings on cocurricular activities. Again

the researcher had to go to the schools/colleges to get the marks from the office. The office staff assisted her in locating the names of the pupils and recording their marks in public examinations.

The researcher had restricted her sample to plus two stage which included eleventh and twelfth classes. For eleventh classes the marks obtained in public examination of tenth class were available, while, for the twelfth class, the researcher^{had} to wait for the declaration of the results.

3.5.1 The procedure adopted some steps to check some errors:

For the level of aggression in students the rankings were done by more than one teacher. This was necessary to minimize the personal bias in their judgement.

The Who am I test was given as a total open test where pupils were free to write whatever they feel about themselves.

To avoid the personal bias of internal assessment of achievement the public examination was taken as a measure of achievement. This was also done because different schools have different standards of evaluations, so that effect also could be nullified by public examination.

Since the study involved two cities belonging to two different states, the public examination systems were different. So instead of total marks obtained, the percentages of marks obtained were taken as the measure of academic performance.

3.6 STATISTICAL ANALYSIS

For the linear relationship the coefficients of correlation (r 's) were computed. In order to find out the effect of selected variables and their interactions on aggression the Analysis of variance with unequal cell size were used. For nonlinear relationships the eta coefficients were computed.
