CHAPTER - IV

METHOD OF STUDY
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4.1 DEVELOPMENT OF DATA GATHERING TOOLS.

The investigator used different questionnaires for collection of data as per the objectives of the study. Questionnaire refers to a device for securing answers to questions by using a form which the respondent fills in himself. The investigator prepared five questionnaires as stated below.

i. Questionnaire on organisation of physical education programme in secondary schools meant for Head Masters.

ii. Questionnaire on views of the teachers on physical education.

iii. Questionnaire on problems and views of physical education teachers.

iv. Questionnaire on problems and prospects of meritorious sportsmen.

v. Socioeconomic status scale for rural and urban areas.
4.1.1 Planning for Data Gathering Tools.

The first step in the construction of a good questionnaire is to get a thorough grasp of the field and of the nature of the data needed. The investigator took into consideration the views of the authors such as Best (1977), Mouley (1970), and Kerlinger (1978). Tools were prepared using both structured and unstructured forms of items.

All possible care was taken for the preparation of a good set of questionnaires. The following criteria as quoted by Whitney (1961) were taken into consideration for developing questionnaires.

i. It should be within the comprehension of the respondents.

ii. It should demand a minimal amount of writing.

iii. It should be directed primarily to matters of assertainable facts and less often to matters of opinion.
iv. It should elicit unequivocal replies.

v. It should deal with matters worth investigation.

vi. Although demanding only brief replies, it should stimulate supplementary communications from the recipients. (PP. 132 - 133)

The following criteria suggested by Mouley (1970) for evaluating a questionnaire were also taken into consideration.

i. It deals with a significant topic, it makes an important contribution and is worthy of professional participation.

ii. The importance of the problem is clearly explained in the statement of the problem and in the cover letter.

iii. It seeks only information not available elsewhere.

iv. It is as brief as the study of the problem will allow.
v. The directions are clear, complete and acceptable.

vi. The questions are relatively free from ambiguity and other invalidating features.

vii. The questions are in good psychological order.

viii. The questions are so arranged that they can be readily tabulated and interpreted. (P.263)

Considering the above criteria, all possible care was taken for the preparation of a good set of questionnaires.

4.1.2 Text of Data Gathering Tools.

The investigator used in total five data gathering tools in the present study. The content of each data gathering tool is given below.
The first data gathering tool was a questionnaire entitled "Organisation of physical education programme in secondary schools" which was administered on headmasters of secondary schools. The questionnaire was developed to gather information on expenditure for organisation of games and sports, the sources of financing physical education programme, facilities available for the purpose, evaluation of different activities organised, role of physical education teacher and other teachers, interest of students and parents in physical education, organisation of timetable etc. The questionnaire intended to gather information on each and every aspects of organisation of physical education programme in secondary schools.

The second data gathering tool was a questionnaire entitled, "Views of the teachers on physical education". The questionnaire was developed to study the views of
teachers on games and sports, merits and demerits of physical education, organisation of physical education programme in schools, facilities available, and their utilization, role of teachers, participation of students, problems of organisation of physical education programme etc. The statements and the questions included in the questionnaire were meticulously framed in order to gather views of the teachers on the above mentioned aspects.

The third data gathering tool was a questionnaire entitled "Problems and views of physical education teachers". The questionnaire was developed to collect preliminary information on physical education teachers, their service conditions, type of co-operation they get from colleagues in organisation of physical education, their role in schools, facilities available, difficulties experienced by them in organising physical education, their views on the present service etc. The questionnaire contained both closed form and open form items.
The fourth data gathering tool was a questionnaire entitled "Problems and prospects of meritorious sportsmen" and it was meant for students with proficiency in games and sports. The questionnaire was developed to gather information on their areas of proficiency, problems experienced by them due to their participation in games and sports, rewards obtained etc.

The fifth data gathering tool was a Socio-economic status scale for urban and rural areas, developed by Aaron, Manlhal and Malatesha in Dharwar.

It consisted of five categories of items such as (i) occupation of father (ii) education of father (iii) material possession (iv) house and (v) shirts and blouses. The last three categories assessed the economic position of the respondents. Each category comprised seven components ranging from the lowest to the highest level.
The subject was given a score under each of these categories so that the final Socio-economic status index was the total of these scores (Appendix-vi). A five level hierarchy of Socio-economic status adopted was: upper, upper middle, middle, lower middle and lower, based on the standard deviation of the T Score distribution. But for the present study, three levels of hierarchy namely upper, middle and lower have been made use of.

4.1.3 Consultation with Experts.

The Questionnaires were sent to a panel of experts consisting of distinguished educationists and veteran professors of education of the state. They were requested to look into the following points.

i. To suggest any other questions and statements, if possible.

ii. To add any other area of relevance.

iii. To omit the areas which are not relevant.
iv. To correct the ambiguities, biases, poor phrasing etc.

v. To examine the relationship between the objectives and the questionnaires.

It was heartening to note that most of the experts extended their views with valuable suggestions.

4.1.4 Try Out and Final Draft.

Considering the views of the experts regarding improvement of the questionnaires, those were properly reviewed and necessary modifications were made. Those were administered on small samples for try out and as no difficulty was experienced in extracting proper responses, the final drafts were prepared.
4.1.5 Medium and Format.

The Questionnaires were written in simple English. Since a poor design of the format creates a poor attitude in the respondent, the investigator tried his best to make the Questionnaires attractive and free from errors.

4.2 VALIDITY OF DATA GATHERING TOOLS.

Validity of a data gathering tool refers to the degree to which it measures what it intends to measure. Before any measuring tool is used, its validity must be assessed, otherwise, the effort will prove useless. Mouley (1970) emphasizing the validity of questionnaires remarked.

"The validity of a questionnaire must be established prior to its use, for validation is an aspect of its development, not of its use in the solution of the problem." (P.255)
Regarding the method of establishing the validity of questionnaires, Mouley (1970) stated,

"At the most elementary level, it is necessary for all the questionnaires to have content validity i.e. each question must be related to the topic under investigation, there must be an adequate coverage of the overall topic, the questions must be clear and unambiguous etc. A more adequate approach to validation consists of checking the agreement between the responses elicited by the questionnaire criterion." (P.254)

As mentioned earlier, the investigator requested a group of experts to comment upon the Questionnaires regarding adequate coverage of different areas under study, ambiguity of questions, relationship between the Questionnaires and concerned objectives etc. Necessary modifications were made according to the comments of the experts.
The Questionnaire entitled "Organisation of physical education programme in secondary schools" was developed to collect information on problems and prospects of physical education programme in secondary schools. The questionnaire contained items on each and every aspect of organisation of physical education programme. There was wide coverage of items and each and every item was related to the objective of questionnaire. The items were clear, and unambiguous. So the questionnaire was considered to have content validity.

The second Questionnaire entitled "Views of the teachers on physical education" was developed to gather the views of the teachers on different aspects of organisation of physical education in secondary schools. Items relating to all the important aspects of physical education were included in the questionnaire. Through a number of statements on physical education, which were
meticulously prepared, it was tried to gather the views of the teachers on different aspects of physical education. The items were clear and unambiguous and were related to the objective of the questionnaire. Hence the questionnaire was accepted to have content validity.

The third data gathering tool was a questionnaire entitled "Problems and views of physical education teachers". It was prepared to study the problems of physical education teachers. The questionnaire contained items on various problems in organisation of physical education programme in secondary schools, and working and service condition of physical education teachers. The items were clear and unambiguous. Any item not related to the objective of questionnaire was not included in it. So the questionnaire had content validity.

The fourth data gathering tool was a questionnaire entitled "Problems and prospects of meritorious sportsmen" meant for students with proficiency in games and sports.
This questionnaire was developed to know the problems and views of the students with proficiency in games and sports on organisation of physical education. It was tried to collect the information through clear and unambiguous items. Each and every item of the questionnaire was related to the objective of the questionnaire and there was wide coverage of items. Hence the questionnaire was accepted to have content validity.

The fifth data gathering tool was a socio-economic status scale, which is a standardised one. The concurrent validity of the scale as reported by the test constructors is 0.61.

4.3 RELIABILITY OF DATA GATHERING TOOLS:

Reliability is one of the most important characteristics of a measuring tool. Reliability refers to the degree to which a measuring tool gives consistent result. If it gives the same result after successive measurement it may be called reliable.
Regarding estimating reliability of questionnaires the statement given by Mouley (1970) is worth mentioning. He stated, "Split-half reliability is, of course, out of the question because of the relative independence and non-additive of the component items. The possibility of phrasing the questions in two different ways and interspersing there—in the questionnaire as a means of testing the reliability of certain items is of dubious validity since the average respondent would probably see through such a trick and simply ignore the second question or answer it in the same way he did the first (P.255).

Mouley (1970) further remarked, "The test-retest method is the only feasible approach to the establishment of the reliability of the questionnaire". (P.255)

The first Questionnaire entitled "Organisation of physical education programme in secondary schools" was administered on the headmasters of selected high schools.
Headmasters were supposed to provide information through the questionnaire as per the records of the institutions. Being a responsible officer they had to provide accurate information following authentic records. The authenticity of the data is not questionable and hence the reliability of the questionnaire was not doubtful.

The second Questionnaire entitled "Views of the teachers on physical education" was administered on all teachers of selected high schools. The third questionnaire entitled "Problems and views of physical education teachers" was administered on physical education teachers of selected high school. The fourth questionnaire entitled "Problems and prospects of meritorious sportsmen" was meant for students having proficiency in games and sports. The investigator developed rapport through personal contact with the concerned teachers, physical education teachers and students and convinced them to provide reliable information. Most of the information collected
through these Questionnaires was cross-checked wherever possible. So the information provided by them was accepted to be reliable. The fifth data gathering tool was a standardised socio-economic status scale and the retest reliability coefficient of the scale as reported by the test constructors is 0.77.

4.4 SAMPLING.

The number of high schools in different districts in Orissa in 1988-89 was as follows:
### Table - 3

Districtwise Number of High schools in Orissa in 1988-89

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Districts</th>
<th>Number of High schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Balasore</td>
<td>524</td>
</tr>
<tr>
<td>2.</td>
<td>Bolangir</td>
<td>180</td>
</tr>
<tr>
<td>3.</td>
<td>Cuttack</td>
<td>968</td>
</tr>
<tr>
<td>4.</td>
<td>Dhenkanal</td>
<td>283</td>
</tr>
<tr>
<td>5.</td>
<td>Ganjam</td>
<td>317</td>
</tr>
<tr>
<td>6.</td>
<td>Kalahandi</td>
<td>160</td>
</tr>
<tr>
<td>7.</td>
<td>Keonjhar</td>
<td>243</td>
</tr>
<tr>
<td>8.</td>
<td>Koraput</td>
<td>156</td>
</tr>
<tr>
<td>9.</td>
<td>Mayurbhanj</td>
<td>298</td>
</tr>
<tr>
<td>10.</td>
<td>Phulbani</td>
<td>74</td>
</tr>
<tr>
<td>11.</td>
<td>Puri</td>
<td>497</td>
</tr>
<tr>
<td>12.</td>
<td>Sambalpur</td>
<td>350</td>
</tr>
<tr>
<td>13.</td>
<td>Sundargarh</td>
<td>189</td>
</tr>
<tr>
<td>14.</td>
<td>ORISSA STATE</td>
<td>4239</td>
</tr>
</tbody>
</table>

Source: Note-1, P.49
From the point of view of educational development, the districts like Cuttack, Balasore and Puri are considered to be developed districts and districts like Phulbani, Koraput, Kalahandi and Sundargarh are backward districts. The investigator selected two districts one developed district and one backward district at random through lottery method. The districts selected were Puri and Koraput. The number of schools selected at random from among the schools in Puri and Koraput districts for the purpose of the study was as follows:

Table- 4

Number of Schools Selected for the study

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Districts</th>
<th>Total number of schools</th>
<th>Schools selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Puri</td>
<td>497</td>
<td>40</td>
</tr>
<tr>
<td>2.</td>
<td>Koraput</td>
<td>156</td>
<td>40</td>
</tr>
</tbody>
</table>
The Questionnaire entitled "Organisation of physical education programme in secondary schools" (Appendix-I) was to be administered on head-masters of secondary schools. Out of the head-masters of eighty schools, who were contacted, only seventy three head-masters responded to the questionnaire and allowed to administer other questionnaires in their institutions.

The nature of the schools included under the purview of the study was as follows:

Table - 5
Nature of Schools Selected

<table>
<thead>
<tr>
<th>Types of Schools</th>
<th>Number of Schools</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
</tr>
<tr>
<td>Government</td>
<td>18</td>
</tr>
<tr>
<td>Private Aided</td>
<td>15</td>
</tr>
<tr>
<td>Private Unaided</td>
<td>01</td>
</tr>
<tr>
<td>Total</td>
<td>34</td>
</tr>
</tbody>
</table>
The Questionnaire entitled, "Views of the teachers on physical education (Appendix-II) was administered on the teachers of all the seventy three high schools. Out of total 1014 teacher, excepting physical education teachers, only 716 teachers responded to the questionnaire. Out of 716 teachers, 311 were females and rest 405 were male teachers.

The Questionnaire entitled "Problems and views of physical education teachers" was administered on physical education teachers of the selected high schools. All the seventy three physical education teachers responded to the questionnaire.

The fourth Questionnaire entitled "Problems and prospects of meritorious sportsmen" and the fifth data gathering tool is socio-economic status scale were administered on meritorious sportsmen. The secondary
school students with talent in sports of different parts of the state are selected and admitted to sports hostels for better development. There were 14 sports hostels in the state in 1992-93 out of which one hostel was there in Koraput district and in Puri district there were three hostels. One sports hostel was selected at random from among the hostels of Puri district and the data gathering tools were administered on the boarders of selected sports hostel of Puri district and sports hostel of Koraput district. The total number of boarders in both the sports hostels was 78 out of which only 51 responded to the data gathering tools.

4.5 PROCEDURE OF DATA COLLECTION.

The investigator went through different books, journals and magazines, dissertations, reports of committees and commissions etc.. Questionnaires were developed and administered on specific samples for collecting required data.
The Questionnaire entitled, "Organisation of physical education programme in secondary schools, " Views of the teachers on physical education and Problems and views of physical education teachers" were administered on concerned persons as mentioned earlier in the selected 73 high schools. The investigation contacted the head-masters personally and convinced them regarding the purpose of data collection and requested them to provide necessary information through the questionnaire. By obtaining the permission of the head-masters the investigator contacted teachers and physical education teachers in the teachers common-rooms in the lunch break. By developing personal rapport the investigator requested them to provide reliable information through the questionnaires. The questionnaire entitled "Problems and prospects of physical education" and the socio-economic status scale were administered on the students having proficiency in games and sports. The investigator visited the sports hostels selected, and personally contacted the boarders with the help of the concerned Superintendents of the hostels for administering the data gathering tools.
4.6 METHOD OF ANALYSIS OF DATA:

The data collected were tabulated and analysed under the following headings.

1. Problems and views of physical education teachers.
2. Views of teachers on physical education.
3. Organisation of physical education programme.
4. Problems and prospects of meritorious sportsmen.

Data collected were tabulated and analysed using appropriate statistical techniques in order to derive fruitful conclusions. The discussion was illustrated by graphs and diagrams where necessary. The following statistical techniques were used.
i. The stability of percentages were found out by using the formula given below. (Garrett 1979, P.197)

\[ \text{SE of a percentage} = \sqrt{\frac{PQ}{N}} \]

in which \( P = \) the percentages occurrence of the behaviour \( Q = (1 - P) \)
\( N = \) Number of cases.

ii. The chi-square test was used (Garrett, 1979 P.253)

\[ \text{Chi-square} = \frac{2}{\text{Fe}} \left( \frac{\text{Fo} - \text{Fe}}{\text{Fe}} \right) \]

in which \( \text{Fo} = \) Frequency of occurrence of observed or experimentally determined facts.

and \( \text{Fe} = \) Expected frequency of occurrence on some hypothesis.