CHAPTER - IV

CONSTRUCTION OF A TOOL MEASURING DECISION-MAKING ABILITY (A)

4.01 Introduction

4.02 Content of the tool
   4.02.1 Selection criteria
       A. Familiarity
       B. Experience
       C. Occurrence
       D. Personal likes and dislikes
       E. Nature

4.02.2 Frequency and importance

4.02.3 Final selection

4.03 Nature of the item-form

4.04 Exploratory study - I
   4.04.1 Introduction
   4.04.2 Material
   4.04.3 Preparation of material
   4.04.4 Sample
   4.04.5 Objectives
   4.04.6 Tools
   4.04.7 Actual procedure
   4.04.8 Speciality of the procedure
   4.04.9 Data analysis
   4.04.10 Observations
       A. Validity of the content
       B. The suitability of material
C. Familiarity
D. Test instructions
E. Effect of age and sex
F. Test form

4.05  Exploratory study - II

4.05.1 Introduction
4.05.2 Material
4.05.3 Sample
4.05.4 Objectives
4.05.5 Procedure
4.05.6 Data analysis
4.05.7 Observations

A. Comparison between the selected and the unselected group

B & C. Judging the content validity

4.06  Pre-pilot study

4.06.1 Introduction
4.06.2 Preparation of material
4.06.3 Sample
4.06.4 Objectives
4.06.5 Procedure
4.06.6 Observations

A. Validity of the content
B. Reasons of good or poor decision-making
C. Comparison of JP and VG students
D. Sex difference
E. The selection of items
4.07 Time limit try-out
   4.07.1 Introduction
   4.07.2 Sample
   4.07.3 Objectives
   4.07.4 Tools
   4.07.5 Procedure
   4.07.6 Observations
      A. Suitability of material
      B. Time limit of the set of 11 items

4.08 Readability try-out
   4.08.1 Introduction
   4.08.2 Sample
   4.08.3 Material
   4.08.4 Objective
   4.08.5 Procedure
   4.08.6 Scoring and analysis
   4.08.7 Observations

4.09 Summary.
CHAPTER - IV

CONSTRUCTION OF A TOOL MEASURING DECISION-MAKING ABILITY (A)

4.01 INTRODUCTION

In order to identify the decision-making ability of children, locating various areas, which provide the children the opportunity to take a decision or in other words - locating the 'universe of behaviour' of decision-making - became the prime step of the present work.

4.02 CONTENT OF THE TOOL

A list of areas wherein children have to make the decisions, was prepared with the help of 11 psychologists by using the technique of brain-storming to tap the 'universe of behaviour'.

A group of 15 adults - teachers and parents were interviewed and were asked to narrate the incidents in which the children of the desired age group have to take their decisions. At a time two to three adults participated in the free-response discussion guided by the researcher. All the suggested problem-situations and the comments made were noted down immediately without interrupting the flow of discussion.

One hundred and forty school-going children of Std. VII & VIII, both boys and girls were approached in
small groups ranging from 10 to 25 students. In a more play-like situation, they were asked to write down in short the problem situations they come across in the daily life (Appendix-A). They wrote down their responses on the papers provided to them.

The efforts were made to gather a wide variety of problem situations by -

- interviewing teachers from different schools,

- approaching children, belonging to different socio-economic classes, and

- contacting children from different schools.

This survey resulted into a broad picture of experience of children. In all 360 problem situations were listed which could be divided into ten different areas pertaining to home, school, friends, relatives, personal likes and dislikes and entertainment etc. etc.

4.02.1 Selection Criteria

Some kind of selection of problem situations was essential firstly to avoid the test to be overloaded with less important and similar type of material, secondly it was highly impractical and impossible to judge and compare the decision-making ability of children in all the situations.
Hence the suggestions from the expert psychologists and the youth leaders were invited and taken into account for determining the content of the test. Following were the criteria on which the problem situations were judged.

A. Familiarity

The students from different socio-economic class should be familiar with the situations. According to the experts, Home, School and Playground or Entertainment were the areas that would provide a more or less common experience to all the children irrespective of age, sex and socio-economic class.

The actual time utilization by the students, in a quick survey conducted by the researcher, was found to be 45% to 50% for school-related activities, 25% to 30% for play and entertainment-related activities and 18% to 25% for home and home-related activities. Hence only these three areas—Home, School and Play and Entertainment—were considered with respective percentage time-utilization for construction of items in the tool.

B. Experience

The situations that are experienced by only a particular socio-economic class—either upper or lower—should not be included.
C. Occurrence

The events taking place very frequently or very rarely should be avoided.

D. Personal likes and dislikes

There are situations in which the choice or decision depends mainly on the personal liking or disliking, such situations should not be included.

E. Nature

Only the social situations *1 should be included.

The scrutiny was made with the help of these suggestions and a list of 118 problem situations belonging to three areas - Home, School and Entertainment was prepared. Here the problem situations were described in one line.

4.02.2 Frequency and Importance

Once the list was ready, the adults and students were again contacted and were asked "How often do the children experience these situations?" Their assessment on the occurrence of the situation on a three-point scale was obtained. This was referred as 'Occurrence Rating' in the present study.

*1 This has been defined earlier in Chapter III.
In all 7 students and 9 adults participated voluntarily for giving the ratings. The adults were teachers teaching the school subjects and/or physical education, were deeply interested in the work undertaken and had genuine interest in the welfare of children.

Each rater in this group received a sheet of paper providing sufficient space for 118 ratings on a three-point scale along with the list of 118 problem situations. The necessary instructions given to the raters are provided in Appendix-B.

At a time only three raters were present, and they worked independently. They were free to ask any difficulty. This helped to clarify their doubts, without disturbing others and also prevented irrelevant discussion during the work.

When the raters finished the Occurrence Rating, they were asked, "which situations among these are essential to judge the decision-making ability of children?" Thus the Importance Rating was also obtained. The instructions given are available in Appendix-B.

The raters were then casually asked about the criteria they followed while giving Importance Rating.
It was noted that the situations that would indicate the maturity of children, awareness of values, enriched personality, correctness of attitudes, respect to others and need for guidance were considered as 'important situations'.

4.02.3 Final Selection

The selection of the problem situations was done with the help of ratings given by all the raters. The situations that occurred on 50% of the times or more and were felt important to at least five raters among the twelve were selected. Thus the content of the test of decision-making was determined.

4.03 The Nature of the Item-Form

In order to determine the suitable item-form for the present study, the different item -forms such as - True-False, Essay-Type, Completion, Open-End, and Multiple-Choice were studied.

True-False items were found susceptible to chance error due to guessing, ambiguity in answering as well as understanding. The Essay Type and Completion type items were noted to be difficult and tedious for scoring accurately, because in both these types personal judgement is required while scoring.
Multiple-Choice items were found superior as they are in the objective form and provide a realistic and appropriate setting for testing. "Students often find multiple-choice questions less ambiguous than completion or true-false items. Instructors find it easier to defend the correct answers to them. Finally, multiple-choice items seem to both instructors and students to be less susceptible to chance errors resulting from guessing than true-false items". (Ebel, 1965, pp. 149-150).

Also, multiple-choice item form is a widely used form of objective test item and it can measure any ability or understanding that can be tested with the help of any other item form.

Thus, though the superiority of multiple choice item was noted, it had to be tried out for the present purpose. It was, hence, desirable to prepare items in 'Open-End' and 'Multiple-Choice' form.

4.04  AN EXPLORATORY STUDY - I

4.04.1  Introduction

This study was conducted in two parts, each having some basic purpose behind it. Part I was undertaken -

1. to see whether the ability of decision-making can be identified and

2. to determine the suitable item-form.
4.04.2 Material

As mentioned earlier, no tool was available to judge the decision-making ability of children. So various ways through which this could be identified were enlisted—

- showing children a video film and asking them their reactions,
- preparing a decision situation with the help of pictures available in books and magazines,
- showing a constructed series of drawings,
- asking children to react in the pre-constructed enacting situations like in constructed performance situation, and
- giving problem situations in printed form.

Due to practical difficulties of unavailability of

- trained actors and sufficient funds,
- a variety of pictures expressing different emotions, moods and actions clearly,
- the artists who could draw various pictures, and the possibility of students' limited participation in an artificially constructed enacting situations; it was desirable to resort to the last alternative.

Hence, it was decided to construct a plot of a problem situation in an easily comprehensible language. This would be a paper-pencil test providing the
convenience of test administration to a group of students and also the easy availability of data with minimum amount of subjectivity.

4.04.3 Preparation of Material

The descriptions of problem situations — plots were constructed in approximately 100-150 words each in Marathi. The plots were so constructed that the problem-situation and the necessary information to solve the problem was easily comprehensible.

The material was prepared in two types.
Type A - Free response
Type B - Multiple choice.

In type A - only the plots were to be presented to the children and they were to suggest all the possible solutions they could think of.

In type B - children were to be presented with the plot as well as the alternatives and they were to select one out of the given alternatives.

In all, five alternatives were suggested for each problem situation. These alternatives were prepared with

*1 These descriptions will be mentioned as 'plots' here onwards. These problem situations were selected on the basis of raters' ratings to determine the content of the test.
the help of two psychologists and a teacher. They consisted of -

- the obvious reactions of adults as well as children,
- the solution over which careful thinking would be necessary,
- the reactions that would indicate the desire to escape from the problem,
- the responses that would point out the fixed or inactive state of the decision-maker,
- the reactions which would reflect the awareness of ethical values.

All the plots were then written down on small cards in Devanagari script. Each plot was written on separate card here-onward referred as Situation Card. The suggested alternatives were also written down on separate cards namely - Solution Card.

The Situation Cards and the Solution Cards were made in two different colours to avoid the confusion.

The adequate instructions, in order to establish the 'rapport' and to create necessary set were prepared and were tried out on the adult sample before the actual administration.
4.04.4 Sample

A small sample of 34 boys and girls from Std. VII and IX, from a reputed school - Modern High School (MHS) *1 was drawn.

For the selection of sample, no specific criterion was observed, though the available sample appeared to be of above average intelligence and of middle class of socio-economic level.

4.04.5 Objectives

A. To determine the validity of the content.

B. To check the suitability of test material.
   1. To see whether the students find any difficulty in reading and comprehending the plots as well as solutions.
   2. To note the approximate time required to read the plot as well as solutions.
   3. To see whether the students suggest some such solutions that adults have not thought of.

C. To see the familiarity of students with the problem situations.

D. To finalise the test instructions.

*1 The code-name of the school as given in the bracket would be used henceforth.
E. To see the effect of age and sex of the student of the performance.

F. To determine the test form i.e. to compare the open-end and multiple choice form of the test with respect to
1. time required,
2. potential to reveal the information about the students, giving the clear picture of thinking for decision-making and
3. convenience of administration and scoring.

4.04.6 Tools

Two types of test-form were tried out.

Type A - Suggest the alternatives i.e.
           Free-Response

Type B - Choose the alternative i.e.
           Multiple-Choice.

In all 14 items were prepared. Each of the types consisted of 10 items and six items were common to both the types.

For type A only the Situation cards were used whereas for type B both the cards - the Situation as well as the Solution Cards were used.
4.04.7 Actual Procedure

The group of students that received the test type 'A' was considered 'Group A'. The group that received the test type 'B' was considered 'Group B' and 'Group AB', had the opportunity to undergo both the test types.

All the three groups - A, B and AB were experimented separately. Each group consisted of maximum ten students.

The general instructions to create tension-free atmosphere, establish rapport were common to all the groups. This was followed by the specific type of instructions and procedure, depending upon the group they belong to (Appendix - C1).

Type 'A'

In the beginning everybody in the group received one Situation Card. They read the card and recorded the time required to read it independently, with the help of the researcher. When everyone in the group finished reading and recording the time, they were told to write all the possible alternatives or solutions they could think of for that situation. The median time required to suggest the solutions was recorded. Further, they were also told to indicate their way of reacting by marking a tick (✓) against the alternative.
Type 'B'

This group of students received two cards - the Situation and a Solution Card both at the same time. The students read the plot and the solutions one after the other and selected one solution. They kept the record of time taken to read and select the solution. The students did not keep the record of time required to read the plot, though the researcher recorded the median time required to read the plot. The students were free to note the comments they wished to express and had the facility to write 'difficult to choose' whenever they wished to.

Type 'AB'

Group 'AB' had both the test types. They were presented with type 'A' first and then type 'B' with the gap of 15 days in between.

The students from all the groups freely commented about the familiarity of the situations, the language used and the alternatives suggested. All these remarks were carefully noted down.

4.04.8 Speciality of the Procedure

A common procedure of exchanging the items was followed for all the three groups. In the beginning ten items were distributed randomly. Everyone in the group
received one item such as a Situation Card in case of group 'A' and a Situation and a Solution Card in case of group 'B'. When everybody in the group finished the work, they were asked to exchange the items in a specific order under the strict supervision. This continued till all the students in the group finished all the items.

This procedure was a unique one as -
- it provided ten different positions to each item,
- no copying or cheating was possible because everybody received different item, and
- within a short time, more data were obtained.

4.04.9 Data Analysis

The data were analysed separately for each grade on the following basis -
1. Percentage of PASS and FAIL on each item.
2. Classification of choices to know the strong distractors.
3. Classification of students' comments in proper order.

4.04.10 Observations

A. Validity of the content

The items - The efforts were made to construct the items in such a fashion that the inadequate perception of problem, lack of imagination, faulty evaluation was
revealed. Though this attempt was successful, more study and data were required to confirm the observations.

Personality - It was felt that the re-occurrence of a particular type of responses - selected or suggested in case of a particular student would automatically reveal his personality traits such as concern for others, giving respect, boldness, cautiousness, well-disciplined nature, escapistism etc. - which was reflected in the responses.

Estimation of the decision-making ability - While arriving at a decision, every individual has to consider the steps of decision-making carefully. The alternatives were phrased in such a manner that the factors affecting each step like perception, fluency, evaluation, imagination, risk-taking - could be estimated. It was strongly felt from the obtained differential responses of the students that the differences among the students could be located and the decision-making ability could be estimated.

B. The Suitability of material

Comprehension - Enough clarity about the narration of the situation as well as the alternatives was evidenced. This was also supported by the comments of the students. They conveyed, "I can easily understand the description of the incident. All the details of the event are given
clearly. I feel as if it is happening in reality". Minor changes were made wherever necessary.

Time - The knowledge of reading speed was necessary to determine the length of each plot, the number of words in the alternatives and the time to be set for each item. It appeared that the average time taken to read the plot varied from 10 seconds to 40 second - indicating 30 seconds per plot of 150 words approximately.

The difference between adults and children - A few responses were gathered from children - which the adults had not anticipated. These were useful for some minor modifications in the plots.

C. Familiarity

Almost all the students reported that they were very much familiar to such situations. They themselves did not experience some of the incidents though they had seen their friends going through such situations.

The students said that they enjoyed the test very much. This was also supported by their spontaneous reactions during the testing session. Some of them blushed while some of them flashed wondering smiles.

The students also reported as -

- "This is exactly what I do sometimes".
- "The boy described in the situations - Suhas - resembles me so much that I imagined myself in place of him". 
"How did you know that this is how I feel?"

D. Test instructions

It was carefully observed whether the students think in the expected manner. A few additional instructions were found essential and were noted accordingly.

E. Effect of age and sex

Though the sample was not large enough to arrive at the concluding remarks, some observations were noteworthy.

Age – No difference was observed between VIIth and IXth std. students with regard to the fluency and content of the suggested alternatives in type A. Also there was no difference between the responses of adults and children.

In type B, the pass percentage of IXth std. students was more than that of VIIth std. students.

Sex – Boys as well as girls suggested 3 to 5 solutions to the problem thus presenting no difference regarding fluency. A very little variety of responses was observed in both boys as well as girls.

The content of the suggested alternatives indicated the differences in thinking between boys and girls. The girls seemed to be more cautious and at times their thinking for problem-solving appeared to be blocked.
Boys suggested some wise alternatives that are generally followed by people and could be followed by anybody.

F. Test form

Time - The time required to read the plot was more or less the same in both the test types - 30 seconds per plot.

In type 'A', the students took five minutes to think of various alternatives and select one. They suggested 3 to 5 alternatives for each plot. Both, the correct as well as wrong choices were suggested. In type 'B', the students required maximum 25 to 30 seconds to take a decision - choosing one alternative among the given five.

Potential to reveal the thinking - In case of type 'A' the thinking of a student was not directed as it was a free response type method whereas in type 'B', the student did not have the opportunity to express his experience and mode of thinking as it was a forced-choice method.

So, with the help of suggested solutions, the student's personality and thinking was revealed more in type 'A' than that in type 'B'.

Convenience of administration and scoring - The separate administration of each item facilitated random order of items for each student and the availability of separate time record of each item. This way of
administration however, might not be feasible for the greater number of items and a large number of students. Secondly, both the types were equally convenient to administer in a group.

The possibility of error of subjectivity and error of mis-interpretation was felt at the time of scoring type 'A' responses. This was not in case of type 'B'. With the help of well defined and properly weighted alternatives, scoring was much easier and accurate in type 'B' than in type 'A'. Type 'B' also made it possible to compare the students on the common base.

4.05 AN EXPLORATORY STUDY - II

4.05.1 Introduction

The purpose of this study was -

1. to see whether the selected and unselected group of students can be differentiated with the help of constructed tool, and

2. to judge the content validity.

4.05.2 Material

The same material that was used for Part I was used for Part II.

4.05.3 Sample

In all nine girls from VIIth std. contributed as a
sample. All these girls belonged to a school specifically meant for the gifted - Jnana Prabodhini School (JP). No further criterion was applied while selecting the sample. Two lady teachers teaching the sample - girls were approached. They gave their own estimates on the potential of the Test-Items and the decision-making ability of the sample drawn.

4.05.4 Objectives

A. To compare the performance of students from school 'JP' i.e. selected group and from school 'HS' i.e. unselected group with respect to: familiarity of problem situations, readability, comprehension, instructions, time required, accuracy in responses, confidence, risk-taking, and difficulty level of responses.

B. To verify whether the decision-making ability could be measured with the help of constructed items.

C. To compare the test performance of students and the ratings given to them.

4.05.5 Procedure

The sample from school 'JP' received only type 'B' items. The items used and the procedure followed for them was exactly the same as followed for group 'B' of school 'HS' in the Exploratory Study - I.
When the sample from school 'JP' had finished reading 2-3 items, it was noticed that they were reading very fast and were also competing among themselves for faster reading. It was strongly felt that they should be warned against this and it was done immediately. The students were also told "not to write the time taken to read the item" - for two items, in order to assure them that it was really not the test of rapid reading.

For the verification of the content of the test, two teachers were interviewed. They were asked to give their opinions about the possibility of measuring decision-making ability with the help of the constructed items.

The teachers were further requested to give their ratings to the available sample with respect to their decision-making ability.

4.05.6 Data Analysis

1. Each student's score was obtained with the help of hand-made scoring key.
2. Pass percentage of each item was obtained.
3. Average rating obtained by the students was calculated.
4.05.7 Observations

A. Comparison between selected and unselected groups

Familiarity, Readability and Comprehension - All the girls from school 'JP' reported that they were familiar with the situations, did not face any difficulty while reading and understanding the items. The same was noted in case of sample from school 'M3'.

Instructions - The general and the specific instructions prepared were sufficient to create the proper response set in both the sample groups. Though, few additional instructions were essential for school 'JP'. The change in instructions was made immediately - when the students were reading rapidly. They were told to be more attentive to their decisions than to reading rapidly.

Time and Accuracy - The time required to arrive at a decision was more or less the same for school 'JP' and school 'M3'.

The students of school 'JP' scored higher than school 'M3' on six out of ten items. The better performance of school 'JP' could be due to the social atmosphere in the school. This school provided the opportunity to think of various alternatives, judge them, weigh them and choose the correct solution for various situations in daily life. This prior experience might have resulted into the better performance of school 'JP'.
The students of both the schools performed equally good on two out of the remaining four whereas the students of school 'AB' performed better than 'JP' on the two items. The exact reasons for this could not be located.

Confidence - Hesitation and confusion were rarely marked in case of students from school 'JP'. They also showed more confidence than the students from school 'AB' in whatever they did.

Risk-taking - In the group of selected sample also the risk taking behaviour could not be pointed out clearly. It was, however, felt that the answers may reveal cautious or risky thinking.

B & C. Judging the content validity

B. The teachers interviewed, commented that the decision-making ability could be measured with the help of such items. The described situations were very much representative of children's social surroundings. They further remarked that, "This is a very interesting and important aspect of students' life, but it might be difficult to measure it".

C. The validity of the constructed tool would be established if the individual score obtained on the test tally with the teachers' ratings. With this view in mind, the teachers were asked to give their judgements regarding
1. Can these students take decision?
2. How accurate would be their decisions?

Almost no difference was located in the ratings given by
two teachers. The grades obtained by the students on the
test differed than that of ratings given to them by the
teachers.

It was strongly felt that the concluding comments could
be made only with the help of sufficient data, which were
not available here.

4.06 PRE-PILOT STUDY

4.06.1 Introduction

As mentioned earlier, the Exploratory Study resulted
into a strong feeling that with the help of well-constructed
problem situations and the alternatives, decision-making
ability could be identified and this was also supported by
the teachers' comments.

4.06.2 Preparation of Material

The problem situations were then constructed on the
basis of previous study. The content of these situations
was already determined. Most of the plots were constructed
by the researcher herself, though psychologists and parents
also helped to provide the raw layouts of 13 situations.
In all 46 plots were newly constructed. Some minor changes
were made in those previously constructed plots. Thus, in all 60 plots were prepared.

Based on the exploratory study, it was decided to prepare a multiple choice item test for identification of decision-making ability. Hence it was essential to construct the alternatives for the problem situations.

As the teachers are aware of the various ways in which the children react to problem situations they were requested to suggest the possible alternatives for all the problem situations.

In all 21 teachers from three different schools were approached, out of which 18 were lady-teachers. These teachers were nominated by the Principals of the respective schools. They suggested the names of the teachers having interest in teaching, having good communication with the students, having insight and experience of problems of students, and having sincerity in their work. The teachers belonged to three different schools centrally situated in Pune City. They had experience of the students coming from the different socio-economic class and having a wide range of variety regarding academic success.

They were told, "Try to imagine the children of 12 to 13 years old and think of various ways in which they would react to these situations. Do not think of right or wrong decisions only. Try to think of various ways in which
different types of children would behave in such situations. Please write down your reactions on the paper provided to you". (Appendix - D1).

The teachers were also asked to report about the potential of these situations to reveal the decision-making ability of children.

Along with this, the students' reactions to different plots were also noted. In all 120 boys and girls from the VIIIth std. were approached in small groups. All the 60 plots were randomly distributed to them. The students were properly motivated and were asked to write "How would you behave in such a situation?" Each student read three plots and recorded the alternatives.

Thus, the special attention was given towards the collection of a variety of responses by

- obtaining the reactions of teachers from different schools,
- presenting the same plot to 3 to 8 teachers, and
- by obtaining alternatives from 120 students from VIIIth std.

All data were grouped and then classified into five different categories. These categories were defined as below.

Category 1 - This alternative indicated correct and feasible decision. It was expected to be
commonly acceptable and did not involve any risk.

Category 2 - This alternative showed correct decision along with some risk taken. This alternative would indicate that the student is ready to accept certain amount of risk. He loses something but gains more.

Category 3 - This alternative implied the individual's state of indecision - like getting stunned, crying or a mere obvious reaction.

Category 4 - This alternative pointed out that the individual has taken the wrong decision due to inaccurate perception of the problem.

Category 5 - This alternative revealed that individual has taken the wrong decision due to lack of consideration for consequences.

Further, the selection of alternatives for 60 plots was done with the help of agreement of two psychologists. The third judgement was considered whenever necessary.

John Dewey had stressed that "A problem is half-solved if it is properly stated" (as cited by Parnes, 1967, p.124). In order to check how far this is true, the statements expressing the problem in three different ways were prepared for each situation. One of the statement expressed the problem appropriately, the other one had
problem stated partially correct, and the remaining statement contained the distorted problem.

All the newly constructed plots, the statements of the problem and the alternatives selected were then written down on separate cards in Devanagari script (Appendix-D3).

In order to avoid the confusion, two different colours were used for Situation and Solution Card. On one side of the Solution Card three types of statements of problem were written and the other side was bearing the five solutions to the problem.

To get the general idea of number of items in three areas, a table is provided here.

**Table - IV.1**

The number of items in different areas

<table>
<thead>
<tr>
<th>Area</th>
<th>No. of Items</th>
<th>% appro.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>12</td>
<td>20%</td>
</tr>
<tr>
<td>School</td>
<td>29</td>
<td>43%</td>
</tr>
<tr>
<td>Entertainment</td>
<td>17</td>
<td>28%</td>
</tr>
<tr>
<td>Home and Recreation</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>60</strong></td>
<td></td>
</tr>
</tbody>
</table>

4.06.3 Sample

A small sample of 26 boys and girls from VIIth and
VIIIth std. was drawn. The sample belonged to two different schools. One school was a reputed school from Pune City - Sou. Vimalabai Garware High School (VG)*1 while the other was specifically meant for gifted children - Jnana Prabodhini (JP)*1. For the selection of sample no specific criteria was observed though, available sample appeared to have average and above average intelligence, and belonged to middle class of socio-economic level. *2 The mean age of the sample drawn ranged between 11.63 to 12.67 years.

Table - IV.2
The sample drawn in the Pre-Pilot Study

<table>
<thead>
<tr>
<th>School</th>
<th>Sex</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP</td>
<td></td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>VG</td>
<td></td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>16</td>
<td>10</td>
</tr>
</tbody>
</table>

= 26

Table - IV.3
The mean age of the sample in the Pre-Pilot Study

<table>
<thead>
<tr>
<th>School</th>
<th>Mean Age</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boys</td>
</tr>
<tr>
<td>JP</td>
<td>11.87</td>
</tr>
<tr>
<td>VG</td>
<td>12.67</td>
</tr>
</tbody>
</table>

*1 The code-names of the schools as given in the bracket would be used hence forth.

*2 This information was obtained while talking to the students.
4.06.4 Objectives

A. To determine the validity of the content of the newly constructed items.

B. To study whether the reasons of good or poor decision-making can be located.

   B1 - The students who understand the problem clearly, get the right solution.

   B2 - The students who fail to understand the problem accurately or those who visualize the problem in a distorted manner, tend to select the alternative indicating inappropriate solution.

C. To observe the difference in performance of the students from the school for gifted (JP) and from the school for other than gifted (VG).

D. To observe the difference in performance of the students due to sex difference.

E. To finalize the items that should be included in the test of decision-making.

4.06.5 Procedure

The decision-making tool consisted of 60 items. The student had to select one alternative among the three indicating the degree to which he has perceived the problem (PU)*1. Then he had to choose one alternative among five (1, 2, 3, 4, 5) suggesting how he would behave in that situation (CA)*1.

*1 The scores that will be obtained by each student.
After establishing the rapport, the specific instructions were given to the students (Appendix - D2). Each student received two cards at a time - a Situation Card and a Solution Card (Appendix - D3). In the beginning the student read the plot. Then he read the statements of the problem, selected one that he felt 'right'. After that he went through five alternatives, selected one among those and wrote his answer in the provided answer sheet. Thus he finished with one item, which was followed by the next.

As each item was separately written, those could be distributed randomly. This provided different positions to each item and secondly the obtained individual responses were without any copying and cheating.

Each item required 2 to 4 minutes for completion thus requiring 3 to 4 hours to complete all the items at a stretch, hence they were not presented in one sitting. They were administered in 4 to 5 sessions according to the convenience of students.

In case of 3 items out of 60, a great deal of difficulty was noted while constructing the alternatives as per definitions. So, all together 57 items were administered to the sample.

The incomplete records of 2 out of 26 students were not included in the results.
4.06.6 **Observations**

A. Validity of the content

All the students could understand the items - plots, problem statements and the alternatives - without any difficulty. They followed the instructions clearly and so no confusion was observed while reading the items, writing the answers and exchanging the items.

The students reported that the situations were familiar to them. They found no difficulty in selecting the alternative. The students were also satisfied with the provided alternatives *1.

The validity of the content of items was also ascertained through discussions with teachers. The teachers said, "The situations are really good and would definitely tell us about the decision-making ability of children. The construction is simple, the descriptions are easy to comprehend, the passages are so well-linked that one feels as if the situation is taking place in reality".

The content validity was also studied with the help of the degree of agreement between the students' performance on decision-making test and the rating given to them by their teachers. It was noticed that these two variables tallied with each other in nine cases out of fifteen - i.e. 60% of times.

*1 Except one student who suggested one more alternative for item No. 25.
B. Reasons of good or poor decision-making

The alternatives were designed in such a way, that the students' thinking would be revealed clearly, and the reasons of good or poor decision-making could be known. The content of five different categories has already been defined.

Hence it could be said that -
- each and every alternative appeared to serve its purpose and
- there was internal consistency in the constructed tool.

C. Comparison of 'JP' and 'VG' students

'JP' students possessed superior intelligence. - they were selected and admitted to school on the basis of their performance on intelligence tests. 'VG' students did not have any such criterion for the admission to school. But the students included in the sample appeared to be of average and above average intelligence. These students scored more than 50% of marks in the school subjects.

The 'JP' students more often selected category 1 and category 2 type alternatives indicating the selection of correct alternative, whereas 'VG' students often selected the wrong alternatives of category 4 and category 5 type responses. Thus the better performance of 'JP' students was noted.
It was further noticed that four out of five who obtained high pass percentage, belonged to 'JP' school and all those five who received low percentage—belonged to 'VS' school.

The performance of students on category 3 revealed that 'VS' students experienced the state of indecision more frequently than 'JP' students.

D. Sex difference

Though the sample was not large enough to draw concluding remarks, notable sex difference was not observed.

E. The selection of items

The results obtained revealed that —
- one item i.e. 2% items got pass percentage below 25,
- thirty one items i.e. 54% items received pass percentage between 26% - 75%, and
- twenty five items i.e. 44% items were passed by more than 75% of students.

<table>
<thead>
<tr>
<th>Pass %</th>
<th>Item</th>
<th>% Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 75</td>
<td>25</td>
<td>44%</td>
</tr>
<tr>
<td>26 - 75</td>
<td>31</td>
<td>54%</td>
</tr>
<tr>
<td>Below 25</td>
<td>1</td>
<td>2%</td>
</tr>
</tbody>
</table>

This resulted into a feeling that few modifications in the tool should be made to discriminate among superior
decision-makers. At the same time, it was also necessary to keep in mind that -
- no time limit was imposed in this Pre-Pilot Study, the students were free to take their own time for each item, and
- the sample obtained possessed average and above average intelligence, thus there was very little discrimination in the sample.

Hence it was decided to retain all these items for the Pilot testing.

4.07 TIME LIMIT TRY-OUT

4.07.1 Introduction

In the Pre-Pilot Study no time limit was set for the completion of items. So, a need of time-limit try-out was felt as a necessary aspect of work.

In order to differentiate the individuals properly and to show fully what the individual is able to accomplish; the test must provide adequate ceiling (Anastasi, 1976). The test therefore should consist of sufficient number of items as well as a proper time-limit should be set for it.

4.07.2 Sample

A sample of 43 students and 2 adults was taken for this purpose. No specific criterion was followed for
selection of students. Those who were willing, participated in this group.

These students were attending coaching classes outside school, belonged to VIIIth Std., scored average marks in their school-subjects and were of different socio-economic classes *1.

The sample of students was divided into four groups as mentioned below.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Group I</th>
<th>Group II</th>
<th>Group III</th>
<th>Group IV</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>7</td>
<td>13</td>
<td>-</td>
<td>-</td>
<td>25</td>
</tr>
<tr>
<td>Girls</td>
<td>3</td>
<td>-</td>
<td>15</td>
<td>2 (Adults)</td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>10</td>
<td>18</td>
<td>15</td>
<td>2</td>
<td>45</td>
</tr>
</tbody>
</table>

4.07.3 Objectives

A. To find the suitability of instructions, instruction booklet, sample items, and the answer-sheet.

B. To finalize the time-limit of a set of 11 items.

*1 This information was obtained through discussions with their coaches.
4.07.4 Tools

Out of 57 items prepared in Pre-Pilot Study, two items were used as Sample Items. The test of decision-making ability thus consisted of 55 items. All these items were divided into five sets – each consisting of 11 items. Each set contained randomly selected items from all the three areas. All these items were in printed form.

Three sets out of five were administered to the available sample to determine the time-limit. Each group of sample was tested separately and received any two sets from the available three.

4.07.5 Procedure

Initially, the efforts were made to establish rapport and create proper mental set of the participants. The purpose and the scope of study undertaken and the reasons for approaching them were explained which was followed by the specific instructions. In brief, it could be said, that in the beginning the answer-sheet and the instruction booklet were distributed to all and the researcher explained in detail – the use of answer-sheet, instruction booklet and the test booklet. The queries were clarified and it was made sure that everyone has understood the instructions clearly. Subsequently the question booklets were distributed – one booklet to each
student; and following instructions were delivered -
"Now, each one of you have got a test booklet. In this
booklet you have 11 questions - each one on a separate
page. The questions are similar to the sample items that
you have finished just now. When I tell you to begin,
start from the first question and go till the end. Do
not waste time. Work as fast as you can, but do not make
haste. When you finish all the questions, please raise
your hand.

Do not forget to give your answers on the separate
answer-sheet. Mark you answers at the proper places".

All the participants had opportunity to complete the
task. The minimum, median and the maximum time required
to complete one set of questions was recorded.

Each one in the group received two sets of questions.
The order of presenting the sets was different for
different groups; though the procedure followed was
exactly the same as mentioned above.

4.07.6 Observations
A. The suitability of material
Instructions - The general instructions given to
create the appropriate mental set, and tension-free
atmosphere were found to be adequate and sufficient.
The sincerity invoked through instructions and the assurance given, that you are not going to be labelled as wrong, or poor or weak, but you may be different than the others helped to avoid cheating, copying and to obtain real reactions of students in a healthy way.

Instruction booklet – The booklet consisting of instructions and sample items was found adequate for the following reasons –

- the participants could not see the test items before hand,
- they could comprehend the instructions well,
- they could get the clear idea about the test item, and
- it helped the researcher to locate the lack of communication between the participants and the researcher.

The answer-sheet – The pattern of the answer-sheet was comprehensible to the students as they did not find any difficulty in indicating their answers.

B. Time-limit for the set of 11 items

In the instructions given for setting the time-limit, the speed was not insisted at all. Hence there was no motivation to complete the set in a minimum time.

The medians of the time required for different sets by different groups were calculated. They ranged from 13 to 18 minutes. The minimum individual time was 10
minutes and the maximum was 20 minutes.

Each group was presented 2 sets. The first required more time than the next.

The final time-limit was fixed at the level of lowest median under 'no-time' condition; it was 13 minutes. Since all the items were presented in 5 different sets separately timed, the time given for the first set was reduced by one minute for the remaining. It was further noted that this time-limit was sufficient and useful to keep up the motivation and concentration of students.

4.08 READABILITY TRY-OUT

4.08.1 Introduction

In the constructed tool, the students were expected to read the matter, comprehend it and indicate their decisions. It was desired that the tool be free from difficulty in comprehension. This was verified in case of 14 items used at the time of Exploratory Study. Though, the remaining items were prepared on the same basis, some experimental work was essential to support this. Hence the readability try-out was taken.

4.08.2 Sample

Seventy three students - both boys and girls - who belonged to the school for gifted contributed as sample.
They belonged to Vth std. Ten boys out of 43 and 12 girls out of 30 had 'English' as their medium of instruction while the rest of the students had 'Marathi' as the medium of instruction upto IVth std. These students were introduced to some techniques of rapid reading for a period of 3 to 4 months before the Readability Try-Out.

4.08.3 Material

Sixteen plots of three areas - Home, School and Entertainment were randomly selected out of 55. The questions on each plot were so set that the overall level of comprehension could be estimated (Appendix - E1).

The psychologist who had special training in rapid reading and conducted regular classes on 'Rapid Reading' for the Vth to VIIIth std. was approached and was requested to check the questions for comprehension, suggest necessary changes and select 10 problem situations to estimate the reading comprehension of students. The psychologist also suggested the time to be allotted for reading and answering. The questions of selected items were cyclostyled. The provision for answers was made on the question paper itself.

4.08.4 Objective

To study the readability of the constructed items.
4.08.5 Procedure

After establishing the rapport, following instructions were given to students -

"Today you are going to have few passages to read. Those are like stories. Read each passage carefully and answer the questions. Do not make haste while reading or do not go slowly. Read at ease, just as you read your story books.

After you finish reading the passage, you have to answer the questions based on it. You will have five sentences for each passage. Mark (✓) if the sentence is true, (X) if the sentence is false, and (?) if no such mention is noted.

You will have maximum 2 minutes to read the passage and one minute to answer the questions". *

The passages were presented in a pre-determined random order - one at a time. Each student received minimum five passages - each followed immediately by its comprehension test. The procedure was the same for boys and girls.

4.08.6 Scoring and Analysis

The comprehension test consisted of 5 statements based on the passage. The students had to mark (✓) if

*1 The time allotted was as per the instructions given by the expert psychologist.
the statement was true, (X) if it was false and (?) if no such statement was mentioned.

The answers were checked manually with the help of hand-made keys.

The sex-wise percent comprehension was calculated for all the items separately. A combined performance was also studied.

4.08.7 Observations

Each plot was read by minimum 29 to maximum 54 students.

No one reported any difficulty in comprehending the passage or in giving the answers. Even the students who had 'English' as their medium of instruction faced no difficulty in reading and understanding the passages. This was also supported by their performance.

Seventy five percent of the students finished reading as well as answering before the allotted time.

All the questions on all the passages were attempted. No omissions were observed.

An overall view of performance showed that minimum 63.52% of students obtained at least 60% marks in the comprehension test (Appendix - E2).
4.09 SUMMARY

In order to construct the test of decision-making ability, the efforts were made to tap the universe of behaviour. The problem situations of the desired age group were gathered with the help of 11 psychologists, 15 teachers and parents and 140 children. The test specifications were arrived at with the help of youth leaders.

Various item-forms were studied and the superiority of multiple-choice item type was verified.

An Exploratory Study resulted into a strong feeling that the decision-making ability can be measured, which was also supported by teachers' comments. This study also revealed that free-response and multiple-choice type test would be appropriate for the present work though, multiple-choice type was found more suitable.

The validity of content was ascertained through the discussions with teachers and the ratings given by them - in Pre-Pilot testing. In all, 57 items were ready for item-analysis.

Out of these, two items were used as sample items. The 55 items were distributed randomly in 5 sets having equal number of items each.
A Time-Limit Try-out revealed that 12 minutes could be the adequate time for a set of 11 items. Though a little more time - i.e. 13 minutes should be given for the set that will be presented in the beginning.

The appropriateness of instructions and instruction booklet was evidenced. No difficulty was found regarding the pattern of answer-sheet and the manner of answering.

The Readability Try-out confirmed that the constructed items were easy to comprehend.

Thus, 55 items on Home, School and Entertainment areas were ready to determine the decision-making ability to children in the desired age group.