CHAPTER - 7

SUMMARY, FINDINGS AND SUGGESTIONS

7.1 Introduction
7.2 Summary
7.3 Findings
7.4 Suggestions for Future Researches
7.5 Educational Implications of Inventory
7.6 Conclusion
7.1 INTRODUCTION

Any research undertaken in the field of education contributes something and it becomes useful in the improvement of education. It can also be helpful individually to all the persons. In the present study, the investigator has tried to construct MIII for the students of secondary schools. The construction of the tool has been done by completely following the scientific and classical method. It can be very useful for measuring the student Intelligence at time such as the selection of the career for the students. In the present chapter, the summary of the research and the whole test construction procedure has been discussed.

7.2 SUMMARY

For a possible solution of the present problem the investigator has undertaken the study of construction and standardization of MIII for the students as a subject of research. The Inventory has been divided in eight parts like, part-I Verbal/Linguistic Intelligence, part-II Logical/Mathematical Intelligence, part-III Musical Intelligence, part-IV Bodily / Kinesthetic Intelligence, part-V Spatial-Visual Intelligence, part-VI Interpersonal Intelligence, part-VII Intrapersonal Intelligence and part-VIII Naturalist Intelligence. In each test by thinking about objective questions the multiple choice items type questions are prepared. Thus the investigator constructed total 153 questions keeping in mind the different objectives. These questions were given to some secondary school students and tried to get the answers of the questions, out of which the effort was done to remove the defects in the options of the questions, language of the questions and face value of difficulty. The Inventory of these questions was given individually to successful teachers, educationists and experts and asked for their suggestions about necessary changes. By giving the place in the Inventory, the final questions pre-pilot testing was done and it was prepared for secondary stage, the Inventory was prepared for pilot testing and the instructions to be given at the time of its administration were thought out. It was then administered to nearly 200 students of the secondary schools of Gujarat. Item analysis was carried out on the basis of the obtained answers of the students. In item analysis difficulty value and discriminating value were found out and the
destructor ability of the destructors given in each questions was assessed. On the basis of difficulty value and discriminating value, total 10 questions were selected for each sub test.

At the end of item analysis, 80 items were selected in MII. Then by arranging the necessary instructions of responding the Inventory one example of common sense so that the students can respond it well, at the end of instructions was given. The time period for the test was kept of 50 minutes. It was also thought out about average time for responding the Inventory and nearly 10 minutes were allotted for distribution of the Inventory and general instructions. Thus by giving it the final form they were printed.

For the final sample of the Inventory, it was administered to total 3000 students of secondary schools out of which there were 1525 boys and 1475 girls. Thus from the whole state of Gujarat by selecting randomly the secondary schools of Urban and Rural area of selected districts, the stratified random sample was taken.

Thus obtained answersheets were assessed and the raw scores were obtained after cancelling the answer sheets which were incomplete or not in proper order. Then Frequency distributions were prepared according to Gender, Area and Medium and statistical calculation were done, in which mainly, mean, median, mode, SD, Q, Skewness, Kurtosis, P10, P90 were included. Then on the basis of Mean and SD, by calculating ‘t-value’ the difference between Gender, Area and Medium were assessed. Norms were established and they were prepared according to Gender, Area and Medium for MII.

Reliability of the test was established for MII by three methods: Test Retest method, Split-half method and Rational Equivalence Method. The scores are given in chapter-6 about it for MII. Thus the reliability of MII was assessed by different methods and it is high.

Validity of MII was assessed by two methods: Content validity & Criterion validity. In the test the items with good difficulty value and proper discriminating value have been selected so operational validity is proved itself. Criterion Validity of Test has been found out by three methods. The scores of
MII were compared with the marks of first test examination Mini Intelligence Test and Rating by principals.

Thus, MII has been prepared completely, scientifically and by observing all the steps of test construction for the secondary school students of Gujarat state. This will be proved useful to the secondary schools and the researchers of Education in evaluation process now onwards.

7.3 FINDINGS

Any research is objective oriented the objective of the present study was construction and standardization of MII. At the end of the construction of the Inventory, while analyzing and interpreting the data, some findings are achieved as they are shown below.

1. Gender difference has been seen in the scores of Multiple Intelligence Inventory between the boys and girls of secondary schools. Mean scores of girls of secondary schools are more than those of boys of secondary schools. So it can be said that in Multiple Intelligence, girls of secondary schools have more intelligence than the boys of secondary schools.

2. According to measurements of Linguistic Intelligence, gender difference has been seen between the scores of Linguistic Intelligence Inventory of boys and girls. Mean scores of girls are more than those of boys, so it can be said that, in Linguistic Intelligence, girls of secondary schools have more intelligence than the boys of secondary schools.

3. According to measurements of Logical-Mathematical Intelligence, gender difference has been seen between the scores of Logical-Mathematical Intelligence Inventory of boys and girls. Mean scores of boys are more than those of girls, so it can be said that, in Logical-Mathematical Intelligence, boys of secondary schools have more intelligence than the girls of secondary schools.

4. According to measurements of Musical Intelligence, gender difference has been seen between the scores of Musical Intelligence Inventory of
boys and girls. Mean scores of girls are more than those of boys, so it can be said that, in Musical Intelligence, girls of secondary schools have more intelligence than the boys of secondary schools.

5. According to measurements of Bodily-kinesthetic Intelligence, gender difference has been seen between the scores of Bodily-kinesthetic Intelligence Inventory of boys and girls. Mean scores of boys are more than those of girls, so it can be said that, in Bodily-kinesthetic Intelligence, boys of secondary schools have more intelligence than the girls of secondary schools.

6. According to measurements of Visual-spatial Intelligence, gender difference has not been seen between the scores of Visual-spatial Intelligence Inventory of boys and girls. Here the mean scores of boys and girls are nearly equal. So it can be said that the boys and girls of secondary schools have equality in Visual-spatial Intelligence.

7. According to measurements of Interpersonal Intelligence, gender difference has been seen between the scores of Interpersonal Intelligence Inventory of boys and girls. Here the mean scores of boys are more than those of girls, so it can be said that, in Interpersonal Intelligence, the boys of secondary schools have more intelligence than the girls of secondary schools.

8. According to measurements of Intrapersonal Intelligence, gender difference has been seen between the scores of Intrapersonal Intelligence Inventory of boys and girls. Here the mean scores of girls are more than those of boys, so it can be said that, in Intrapersonal Intelligence, the girls of secondary schools have more intelligence than the boys of secondary schools.

9. According to measurements of Naturalist Intelligence, gender difference has not been seen between the scores of Naturalistic Intelligence Inventory of boys and girls. It means, here the mean scores of boys and girls are nearly equal. So it can be said that, the boys and girls of secondary schools have equality in Naturalist intelligence.
10. As a whole, here the girls of secondary schools have been seen superior in the measurements like Linguistics, Musical and Intrapersonal Intelligence out of eight measurements of Multiple Intelligence Inventory; where as the boys of secondary schools have been seen superior in the measurements like Logical-Mathematics, Bodily-kinesthetic and Interpersonal Intelligence.

11. Area difference has been seen in the scores of Multiple Intelligence Inventory between the students of secondary schools of Urban area and those of Rural area. Here mean scores of the students of secondary schools of Urban area more than those of Rural area. So it can be said that the students of secondary schools of Urban area have more intelligence than the students of secondary schools of Rural area.

12. According to measurement of Linguistic Intelligence, area difference has been seen in the scores of Linguistic Intelligence Inventory between the students of secondary schools of Urban area and those of Rural area. Here mean scores of the students of secondary schools of Rural area are more than those of the students of secondary schools of Urban area. So it can be said that in Linguistic Intelligence, the students of secondary schools of Rural area have more Intelligence than the students of secondary schools of Urban area.

13. According to measurement of Logical-Mathematical Intelligence, area difference has been seen in the scores of Logical-Mathematical Intelligence Inventory between the students of secondary schools of Urban area and those of Rural area. Here mean scores of the students of secondary schools of Urban area are more than those of the students of secondary schools of Rural area. So it can be said that, in Logical-Mathematical Intelligence, the students of secondary schools of Urban area have more Intelligence than the students of secondary schools of Rural area.

14. According to measurement of Musical Intelligence, area difference has been seen in the scores of Musical Intelligence Inventory between the
students of secondary schools of Urban area and those of Rural area. Here mean scores of the students of secondary schools of Urban area are more than those of the students of secondary schools of Rural area. So it can be said that in Musical Intelligence, the students of secondary schools of Urban area have more Intelligence than the students of secondary schools of Rural area in Musical Intelligence.

15. According to measurement of Bodily-kinesthetic Intelligence, area difference has been seen in the scores of Bodily-kinesthetic Intelligence Inventory between the students of secondary schools of Urban area and those of Rural area. Here mean scores of the students of secondary schools of Rural area are more than those of the students of secondary schools of Urban area. So it can be said that in Bodily-kinesthetic Intelligence, the students of secondary schools of Rural area have more Intelligence than the students of secondary schools of Urban area in Bodily-kinesthetic Intelligence.

16. According to measurement of Visual-spatial Intelligence, area difference has been seen in the scores of Visual-spatial Intelligence Inventory between the students of secondary schools of Urban area and those of Rural area. Here mean scores of the students of secondary schools of Urban area are more than those of the students of secondary schools of Rural area. So it can be said that in Visual-spatial Intelligence, the students of secondary schools of Urban area have more Intelligence than the students of secondary schools of Rural area in Visual-spatial Intelligence.

17. According to measurement of Interpersonal Intelligence, area difference has not been seen in the scores of Interpersonal Intelligence Inventory between the students of secondary schools of Urban area and those of Rural area. Here equality has been seen among the students of secondary schools of Urban area and those of Rural area, in case of Interpersonal Intelligence. So it can be said that, the students of secondary Schools of Urban area and Rural area have equality in Intelligence in case of Interpersonal Intelligence.
18. According to measurement of Intrapersonal Intelligence, area difference has been seen in the scores of Intrapersonal Intelligence Inventory between the students of secondary schools of Urban area and those of Rural area. Here mean scores of the students of secondary schools of Rural area are more than those of the students of secondary schools of Urban area. So it can be said that in Intrapersonal Intelligence, the students of secondary schools of Rural area have more Intelligence than the students of secondary schools of Urban area in Intrapersonal Intelligence.

19. According to measurement of Naturalist Intelligence, area difference has been seen in the scores of Naturalist Intelligence Inventory between the students of secondary schools of Urban area and those of Rural area. Here mean scores of the students of secondary schools of Rural area are more than those of the students of secondary schools of Urban area. So it can be said that in Naturalist Intelligence, the students of secondary schools of Rural area have more Intelligence than the students of secondary schools of Urban area in Naturalist Intelligence.

20. As a whole, students of Urban area have been seen superior in measurements like Logical-Mathematics, Musical and Visual-spatial Intelligences out of eight measurements of Multiples Intelligence Inventory, where as the students of secondary schools of Rural area have been seen superior in measurements like Linguistics, Bodily-kinesthetic, Intrapersonal and Naturalist.

21. Medium-wise difference has been seen in the scores of Multiple Intelligence Inventory between the students of secondary schools of English medium and those of Other medium. Here mean scores of the students of secondary schools of English medium are more than those of the Other medium. So it can be said that the students of secondary schools of English medium have more intelligence than the students of secondary schools of the Other medium.
22. According to measurement of Linguistic Intelligence, medium-wise difference has been seen in the mean scores of Linguistic Intelligence Inventory between the students of secondary schools of English medium and those of the other medium. Here the mean scores of the students of secondary schools of the other medium are more than those of the students of the secondary schools of English medium. So it can be said that in Linguistic Intelligence, the students of secondary schools of other medium have more Intelligence than those of English medium.

23. According to measurement of Logical-Mathematical Intelligence, medium-wise difference has been seen in the mean scores of Logical-Mathematical Intelligence Inventory between the students of secondary schools of English medium and those of the other medium. Here the mean scores of the students of secondary schools of the English medium are more than those of the students of the secondary schools of Other medium. So it can be said that in Logical-Mathematical Intelligence, the students of secondary schools of English medium have more Intelligence than those of Other medium.

24. According to measurement of Musical Intelligence, medium-wise difference has been seen in the mean scores of Musical Intelligence Inventory between the students of secondary schools of English medium and those of the other medium. Here the mean scores of the students of secondary schools of the Other medium are more than those of the students of the secondary schools of English medium. So it can be said that in Musical Intelligence, the students of secondary schools of Other medium have more Intelligence than those of English medium.

25. According to measurement of Bodily-kinesthetic Intelligence, medium-wise difference has been seen in the mean scores of Bodily-kinesthetic Intelligence Inventory between the students of secondary schools of English medium and those of the other medium. Here the mean scores of the students of secondary schools of the Other medium are more
than those of the students of the secondary schools of English medium. So it can be said that in Bodily-kinesthetic Intelligence, the students of secondary schools of Other medium have more Intelligence than those of English medium.

26. According to measurement of Visual-spatial Intelligence, medium-wise difference has been seen in the mean scores of Visual-spatial Intelligence Inventory between the students of secondary schools of English medium and those of the other medium. Here the mean scores of the students of secondary schools of the English medium are more than those of the students of the secondary schools of Other medium. So it can be said that in Visual-spatial Intelligence, the students of secondary schools of English medium have more Intelligence than those of Other medium.

27. According to measurement of Interpersonal Intelligence, medium-wise difference has been seen in the mean scores of Interpersonal Intelligence Inventory between the students of secondary schools of English medium and those of the other medium. Here the mean scores of the students of secondary schools of the English medium are more than those of the students of the secondary schools of Other medium. So it can be said that in Interpersonal Intelligence, the students of secondary schools of English medium have more Intelligence than those of Other medium.

28. According to measurement of Intrapersonal Intelligence, medium-wise difference has been seen in the mean scores of Interpersonal Intelligence Inventory between the students of secondary schools of English medium and those of the other medium. Here the mean scores of the students of secondary schools of the English medium are more than those of the students of the secondary schools of Other medium. So it can be said that in Intrapersonal Intelligence, the students of secondary schools of English medium have more Intelligence than those of Other medium.

29. According to measurement of Naturalist Intelligence, medium-wise difference has been seen in the mean scores of Naturalist Intelligence
Inventory between the students of secondary schools of English medium and those of the other medium. Here the mean scores of the students of secondary schools of the Other medium are more than those of the students of the secondary schools of English medium. So it can be said that in Naturalist Intelligence, the students of secondary schools of Other medium have more Intelligence than those of English medium.

30. On the whole students of the secondary schools of English medium are more superior in measurements like, Logical-Mathematical, Visual-spatial, Interpersonal and Intrapersonal out of eight measures of Multiple Inventory; where as students of secondary schools of the other medium are superior in Linguistic, Musical, Bodily-kinesthetic and Naturalistic Intelligence.

7.4 SUGGESTIONS FOR FUTURE RESEARCHES

A Research is a continuous and cyclic process. A single person can not study any problem regarding all the aspects of the problem. Every research leads to new work of research. Every research work opens the gate of new research work. Thus with the view and based on the present study the researcher recommends future researches as below:

1. The multiple Intelligence Inventory (MII) can be standardized for Higher secondary, Graduate and post graduate level students.

2. MII can be translated in Gujarati and Hindi or in any language of the world and norms can be established.

3. Future more, it can be studied by with different variables like socio-economic stands, study habits, family or cultural backgrounds, in context to Indian tradition and also with beliefs and superstitions.

4. Relation of different variables such as social Intelligence, spiritual Intelligence, Emotional intelligence with multiple Intelligence can be studied.

5. Comparison and in context with Multiple Intelligence, following points can be studied.
i. Comparison between multiple Intelligence and Traditional intelligence with variables like age, gender, standard, area etc.

ii. Growth and development of a children in context to multiple Intelligence role of Multiple intelligence in the development of Gifted children or Normal or mentally retreaded children.

iii. Role of Multiple Intelligence in comparison and in context to the development of Gifted children v/s Normal children and Normal v/s Mentally retarded children or Gifted children v/s Mentally retired children.

iv. Multiple Intelligence and its relation with stress, motivation, aptitude, attitude, anxiety, creativity, habits, frustration, Interest, and soon.

v. Multiple Intelligence and its relation with preadolescence period, adolescence period and comparison between them.

7.5 EDUCATIONAL IMPLICATIONS

1. The Multiple Intelligence Inventory (MII) will become an important tool to measure the level of multiple Intelligence of secondary school students.

2. The MII has been developed with the aim that a person can select specific field or job of his level of my and interest for his better future level hood. Thus, with the help of MII, Teacher or researcher or person himself can identify the level of Multiple Intelligence and can select better field or job. An teacher also can identify and classify students multiple intelligence and different sections of it, and help them to select proper field for future study after 10th like Arts, commerce, science, painting/fine arts, architecture, scientist or can give any other career guidance.

3. With the help of MII, a teacher can understand the strengths and weaknesses of the students during classroom teaching. As well as teacher encourage the to try new ways of learning and thinking.
4. MII will be a helpful tool to identify students for educational guidance who achieved low academic results and high level of multiple Intelligence.

5. MII will be helpful to teachers and researchers to do further research in the field of multiple Intelligence. It will be helpful to measure ability and interest of a person as well as capacity of learning.

6. MII will be helpful to researchers to measure the level of multiple Intelligence as a variable in different researches.

7. The MII will help the teachers to encourage students to think and reason logically, a willingness to assume challenges and responsibility, to develop confidence and positive self image, to be well prepared and to be caring citizens who are sensitive to the needs of others as well as of country.

7.6 CONCLUSION

Present test has been prepared for secondary school students. Thus, the investigator has tried to justify properly problem is not solved by the planning of solution of any problem. Planning is only a probable key for solving the problem. Co-operative effort is needed of educaitonalsists for the solution of the problem occurred at a large scale.

Sometimes the proportion of the probability of solution increases by the repetition of efforts only. For the present study, how the proper use of probable proportion is done and the significance of the present research depend on the results of it. In the present research the investigator has tried to solve the problem by one’s own honest and committed efforts and it is a probable efforts. Here the present research is not completed but according to planning undertaken by the investigator and due to some bindings of the limitations of time, by achieving the decided objectives and assessing hypothesis the present planning is ended here.