DESION MAKING AND PROBLEMSOLVING ABILITIES OF HIGHER SECONDARY SCHOOL STUDENTS IN KANYAKUMARI DISTRICT

Dissertation submitted to the Tamilnadu Teachers Education University

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MASTER OF EDUCATION

By

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(RE-ACCREDITED BY NAAC WITH 'A' GRADE)

ATTOOR, KANYAKUMARI DISTRICT

JUNE – 2014

CHAPTER-I

INTRODUCTION

- **Need & significance of the study**
- **Statement of the problem**
- **Operational definition of key terms**
- **Objectives of the study**
- **Hypotheses framed**
- **Methodology in brief**
- **Delimitation of the study**
- **Organization of the report**

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DECLARATION

I hereby declare that the dissertation entitled DECISION MAKING AND PROBLEM SOLVING ABILITIES OF HIGHER SECONDARY SCHOOL STUDENTS IN KANYAKUMARI DISTRICT submitted to Tamil Nadu Teachers Education university Chennai, in partial fulfillment of the requirements for the award of Master of Education. It is a record of original and independent work done by me under the supervision and guidance of Dr. Deepa. R. P. Asst. Professor, and it has not formed part of the any degree of other similar titles of any discipline.

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CERTIFICATE

This is to certify that the dissertation entitled DECISION MAKING AND PROBLEM SOLVING ABILITIES OF HIGHER SECONDARY SCHOOL STUDENTS IN KANYAKUMARI DISTRICT is submitted to Tamil Nadu Teachers Education University, Chennai in partial fulfillment of the requirement for the M.Ed. Degree by Salina Theres. L under my guidance and supervision.

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Salina Theres. L

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CHAPTER-I

INTRODUTION

Education contributes significantly to the complete development of a man and to make him a very well-adjusted person in the world. Education sustains the human values which contribute to individual and collective wellbeing. It forms the basis for lifelong learning. It provides confidence to face challenges. It inculcates skills to make correct decision and solve problems.

Decision making is the process through which individuals or groups combine and integrate available information in order to choose one out of several possible choices of action. Effective decision making involves a correct identification of the problem designing alternative methods to solve the problem or even collection of information, evaluating the alternative methods and also collected information choice of alternative decision and follow up the decision to generate feedback.

Problem solving ability holds the special importance in the study of mathematics. The primary goal of Mathematics teaching and learning is to develop the ability to solve a wide several complex Mathematical problems. To many people Mathematics is synonym with solving problems, doing word problems and creative patterns, interpreting figures, developing geometrical constructions, and providing theorems etc. The National Council of Teacher of Mathematics (NCTM(1980)) recommended the problem is the focus of Mathematics teaching because it encompasses skills and functions which are important part of everyday life.

The problem solving ability is one, which involves the use of the difficult ways to solve problems, through reflective thinking and reasoning. Problem solving ability as the name indicates, the ability of the students to find a solution. In the process of solving the problem the students may be required to gather data, analyze and interpret the information to arrive at a solution to the problems. Risk, T.M defines problem solving is a planned act upon a difficulty or perplexity for the purpose of finding a satisfactory solution.

Problem solving and Decision making are closely linked, and each requires creativity in identifying and developing options for which the brainstorming technique is particularly useful. Good decision making requires a mixture of skills; creative development and identification of options, clarity of judgment, firmness of decision and effective implementation. For group problem solving and decision making or when a consensus is required, workshops help, in which we can incorporate these tools and process as appropriate.

NEED AND SIGNIFICANCE OF THE STUDY

In the rapidly changing world youth need to be equipped with skills to guide them to make correct decisions. Young people make lifestyle and career choices that impact their futures and the future of society. Youth who make decisions to engage in risky behavior can negatively affect themselves and society in general.

Decision making can be regarded as the cognitive process resulting in the selection on a belief or a course of action among several alternative possibilities. Every decision making process produces a final choice that may or may not prompt

action. Decision making is one of the central activities and is a huge part of any process of implementation .Making a decision implies that there are alternative choices to be considered and in such a case we want only to identify as many of these alternatives as possible but to choose the one that has the highest probability of success or effectiveness and best fits with our goals, desires lifestyle values and soon. Decision making can also be regarded as a problem solving activity terminated by a solution deemed to be satisfactory. It is therefore a reasoning or emotional process which can be rational or irrational and can be based on explicit assumptions or tacit assumptions. Most decisions are followed by some form of cost-benefit analysis.

Mathematics instruction in the classrooms varies from class to class. Many instructions are influenced by the view that the pupils learn to solve problems chiefly through practice in which the teacher's role is to provide ample number of problems and an opportunity to solve them. In some cases, the emphasis is on rote memorization of Mathematical concepts and processes. It has not only taken away pleasures in learning but also developed phobia in all that concerns Mathematics for long period in life. Problem solving in Mathematics is an intricate process which calls for a problem solver who is engaged in a Mathematical task to organize and deal with domain- specific and domain-general pieces of knowledge. Mathematical problem solving has occupied a very important place in the teaching of Mathematics Rose Bloom (1966) and Polya (1966) assert that the 'central' activity of all teaching of mathematics is the development of problem solving skills in the students. Collier and Lerch (1969) observe that problem solving is a 'Major

force' in the growth of modern mathematics and Barnes (1959) stresses that it should be 'Major concern' of the school curriculum.

Problem solving ability is closely related to decision making ability. Students who have the ability to solve the complex problems can make correct decisions. Keeping these in view, the investigator made an attempt to study the relationship between decision making and problem solving abilities of higher secondary school students.

STATEMENT OF THE PROBLEM

The present study is entitled as ``Decision making and Problem solving abilities of Higher secondary students in Kanyakumari district''.

OPERATIONAL DEFINITIONS OF THE TERMS

DECISION MAKING ABILITY

Here it means the scores obtained by higher secondary school students in the decision making ability test administered by the investigator.

PROBLEM SOLVING ABILITY

Here it means the scores obtained by higher secondary school students in the problem solving ability test administered by the investigator

HIGHER SECONDARY SCHOOL STUDENTS

Students who are studying in class 11 and 12 of various higher secondary schools in Kanyakumari district.

OBJECTIVES OF THE STUDY

1. To study the decision making ability of Higher Secondary students in Kanyakumari district.
2. To study the problem solving ability of higher secondary students in Kanyakumari District.
3. To compare the total as well as dimension wise mean score of decision making ability of higher secondary school students with respect to
    i. Gender
    ii. Locality
    iii. Medium
    iv. Type of school
    v. Type of management
    vi. Parental Educational Qualifications
    vii. Order of Birth
    viii. Type of family
    ix. Parental occupation
4. To compare the mean score of problem solving ability of higher secondary school students with respect to
    i. Gender
    ii. Locality
    iii. Medium
    iv. Type of school
    v. Type of management
    vi. Parental Educational Qualifications

vii. Order of Birth

viii. Type of family

ix. Parental occupation

5. To study the correlation between decision making ability and problem solving ability of higher secondary students of Kanyakumari district.
6. To study the regression between the Decision making ability and Problem solving ability of higher secondary students of Kanyakumari district.

HYPOTHESES

1) There is no significant difference in the total as well as dimension wise mean scores of decision making ability of male and female higher secondary students
2) There is no significant difference in the total as well as dimension wise mean scores of decision making ability of rural and urban residence higher secondary students.
3) There is no significant difference in the total as well as dimension wise mean scores of decision making ability of rural and urban school higher secondary students.
4) There is no significant difference in the total as well as dimension wise mean scores of decision making ability of Tamil and English medium higher secondary students.
5) There is no significant difference in the total as well as dimension wise mean scores of decision making ability of Boys, Girls and co-education higher secondary students.

6) There is no significant difference in the total as well as dimension wise mean scores of decision making ability of Government, Aided and unaided higher secondary students.

7) There is no significant difference in the total as well as dimension wise mean scores of decision making ability of higher secondary students whose parents having difference educational qualifications

8) There is no significant difference in the total as well as dimension wise mean scores of decision making ability of higher secondary school students having different order of birth.

9) There is no significant difference in the total as well as dimension wise mean scores of decision making ability of nuclear and joint family of school students.

10) There is no significant difference in the total as well as dimension wise mean scores of decision making ability of higher secondary school students whose parents having different occupation.

11) There is no significant difference in the mean scores of problem solving ability of male and female higher secondary students.

12) There is no significant difference in the mean scores of problem solving ability of rural and urban higher secondary students.

13) There is no significant difference in the mean scores of problem solving ability of Tamil and English medium higher secondary students.

14) There is no significant difference in the mean scores of problem solving ability of Boys, Girls and co-education higher secondary students.

15) There is no significant difference in the mean scores of problem solving ability of Government, Aided and unaided higher secondary students.
16) There is no significant difference in the mean scores of problem solving ability of higher secondary students whose parents having difference educational qualifications.
17) There is no significant difference in the mean scores of problem solving ability of higher secondary school students having different order of birth.
18) There is no significant difference in the mean scores of problem solving ability of nuclear and joint family of school students.
19) There is no significant difference in the mean scores of problem solving ability of higher secondary school students whose parents having different occupations.
20) There is no significant correlation between Decision making ability and problem solving ability of higher secondary school students.
21) There is no significant regression between Decision making ability and Problem solving ability of higher secondary school students.

METHODOLOGY IN BRIEF

THE METHOD

Normative survey method was used for the present study.

THE SAMPLE

The present study was conducted on a sample of 500 higher secondary students in various higher secondary schools in Kanyakumari district.

THE TOOLS

i. General data sheet

ii. Problem solving ability test (constructed and validated by Dr.R.P.Deepa and Dr.M.Sadananadan (2010-2011)).

iii. Decision making ability Questionnaire (constructed and validated by investigator.

STATISTICAL TECHNIQUES USED

The following techniques were used

i. Arithmetic mean

ii. Standard deviation

iii. `t' test

iv. ANOVA

v. Pearson's product moment method of correlation

DELIMITATION OF THE STUDY

i. The sample size has limited to 500 higher secondary school students only.

ORGANIZATION OF THE REPORT

Chapter : 1 Deals with Introduction, need and significance of the study statement of the problem. Operational definitions of terms, objectives of the study and hypothesis framed.

Chapter : 2 Deals with the review of related literature.

Chapter : 3 Deals with methodology of the present study. This chapter consists of the test development plan and procedure.

Chapter : 4 Deals with analysis and Interpretation of collection data.

Chapter : 5 Deals with findings conclusion, educational implications of the study and suggestions for future study.

CHAPTER-II

REVIEW OF THE LITERATURE

- **Theoretical overview**
- **Studies conducted in India**
- **Studies conducted in Abroad**

CHAPTER-II

THEORITICAL OVERVIEW

DECISION MAKING ABILITY

Decision making is described as a Cognitive process by which individuals choices, judgments are ultimately come to conclusions, that guide behavior. Orasanu Connolly (1993) defines it as a series of Cognitive operations performed consciously, which include the elements from the environment in a specific time and place. Narayan and Corcoran-Perry (1997) considered decision making as the interaction between a problem that needs to be solve and a person who wishes to solve it with in a specific environment.

Individual differences play a strong role in shaping cognitive process associated with decision making [Lerner and Keltner, 2000].

DIMENSIONS OF DECISION MAKING ABILITY

DECIDING

Deciding means to choosing something, especially after thinking carefully about several possibilities and the deciding may be depend on the particular solution or reason.

GENERATING POTENTIAL SOLUTION

To succeed a person should define the correct problem and also should able to select the best solution unless it gets on the list of potential solutions to be evaluated.

EVALUATE THE DECISION

Once a problem is defined the alternatives have been considered and the decision has been made it is important to evaluate the result of the decision. These results must be compared to the results that the decision makes was expecting. Evaluating decisions can lead to insights into wags to improve future decisions.

COMMUNICATING AND IMPLEMENTING

Communicating refers to sharing and giving information and ideas to communicator and receiver. It can be verbal or just a sweet gesture to shown by the communicator.

Decision implements is where thought moves to reality. In the previous steps of the decision making process. Positive decision making environment evaluated and decide has focused on generating the clarity for an outcome that will be achieved in the future.

PROBLEM SOLVING ABILITY

Mathematics instruction in the classrooms varies from class to class. Many instructions are influenced by the view that the pupils learn to solve problems chiefly through practice in which the teacher's role is to provide ample number of problems and an opportunity to solve them. Mathematics problem solving has occupied a very important place in the teaching of mathematics Rose bloom (1966) and polya (1966) assert that the "central" activity of all teaching of mathematics is the development of problem solving skills in the students. Collier and Lerch (1996) observe that problem solving is a major force in the growth of modern mathematics

and Barner (1959) Stresses that it should be `major' concern of the school curriculum.

Mantangue (2006) defined mathematical word problem solving as a process involving two stages problem ``representation'' and ``problem execution''. Both of them are necessary for problem solving successfully. Successful problem solving is not possible without first representing the problem appropriately. Appropriate problem representation indicates that the problem solver has perceived the problem and serves to guide the student towards the solution plan. Student who have difficulty representing mathematic problems will have difficulty solving them.

Schoenfeld (1987) pointed out that the knowledge of meta cognitive and cognitive skills will help the students build a thinking plan which involves strategy, skills and procedures to solve the given problems. This new thinking plan is connected to the student understanding of the relevant mathematical concepts that will be used. A mathematical problem solving task can be down into two major component processes (a) problem comprehension (b) problem solution. Most mathematics instruction focuses on the problem solution phase. Student usually has trouble in the problem comprehension and translation phase (Mayer 1989). In order to solve the problem efficiently one has to acquire new information, selfrelevant information to employ it for a problem situation and transform it so as to make it worthy for problem solution. The task of acquiring new information can be viewed as an instance of problem solving [Bransford, 1986]. The task of problem solving also requires prediction analysis of facts and principles to develop cause-effect relationship.

According to Yokam and simpson, “A problem occurs in a situation in which a felt difficulty to act is realized. It is a difficulty that is clearly present and recognized by the thinker. It may be a purely mental difficulty or it may be physical and involve the manipulation of data. The distinguishing thing about a problem, lower is that it impresses the individual who meets it as needing a solution. He recognizes it as a challenge”.

STEPS IN PROBLEM SOLVING ABILITY

Problem solving follows definite and specific steps

IDENTIFYING AND DEFINING THE PROBLEM

The problem arises out of a felt need and out of existing student activities and environment activities. The students should be able to identify and clearly define the problem. The problem that has been identified, should be interesting, challenging and motivating for the students to participate in exploring.

ANALYSING THE PROBLEM

The problem should be carefully analysed as to what is given and what is to be found out. Given facts must be identified and expressed if necessary in symbolic form. The relationships are to be clearly stated. Relations that are not explicitly stated may be supplied by the students

FORMULATING TENTATIVE HYPOTHESIS

The focus at this stage is on hypothesizing -searching for a tentative solution to the problem. Analysis of the given data, and analysis of

interrelationships among the given facts helps the students in formulating hypothesis or educated guesses as the solution to the problem at hand.

TESTING THE HYPOTHESIS

Appropriate methods should be selected to the validity of the tentative hypothesis as a solution to the problem. If it is not proved to be the solution, the students are asked to formulate alternate hypothesis and proceed.

CHECKING THE RESULT OR VERIFICATION OF THE RESULT

At this step the students are asked to determine their results and substantiate the expected solution. The students should be able to make generalization and apply it to their daily life.

INDIAN STUDIES ON DECISION MAKING ABILITY:

Suresh, Rajendran (2008) conducted a study on relationship of locus of control and risk taking with decision making. A sample of 99 subjects was drawn randomly from the middle level executives of a large public sector organization in TamilNadu. He used locus of control scale by Paul spector (1938). Yusuf (1972). Flinders Decision making Questionnaire by Leon Mann (1982) for collecting data. The findings revealed that there was a positive correlation between risk talking and vigilant Decision making.

Garg (2008) conducted a study on decision making in children an experimental investigation. The sample comprised of 192 children in the age range of 10-16 years. The tools used for the study were lucky seven games, a skill- chance game, ad via games, a guards guessing games, a probability the

decision making and risk talking. The finding revealed that decision making under conditions of uncertainty was found to be different. In children were found to be make chances and if they were attempting to maximize expected utility .

Sibichen and Annaraja (2010) conducted a study on critical thinking and Decision making skills in teaching. The sample consisted of 75 secondary teacher Education students, among them 37 were males and 38 were female students. The tools used for thinking skill Assessment scale developed by Sibichen and Annaraja (2009). The findings revealed that there was significant difference between gradually and post graduate secondary teacher education students in their decision making skill.

Velayudham, Devi (2012) studied Anxiety and decision making styles of college students. The sample consisted of 200 student which included 100 female and 100 male students from various department of Bharathiar university in Coimbatore. The scales used for the purpose of the study were Sinha's Anxiety scale (1968) and decision making Questionnaire by Leon Mann (1982). Findings revealed that more anxious students tended to adopt vigilant decision making style. Female students had higher in defensive avoidance and rationalization than their male counter parts.

Sharma, Banth, Srivastava (2012) studied self involvement of Adolescents and the involvement of their parents in the Decision making. The sample of study comprised of 40 youth participate out of which 20 were single male young adolescents and 20 were single female adolescents and were selected from the Arts stream of various colleges of Chandigarh. The tool used for the study was

youth Decision making involvement scale. The finding revealed that single male youth tend to take suggestions from all family members and involved them jointly in taking decisions.

Thomas, Paul (2012) conducted a study on influence of celebrity endorsed Advertisement on Ethical Decision making of Commerce students in higher secondary schools. The sample of 100 respondents consisting of 52 boys and 48 girls. The tools used for the study were demographic profile and a situational question with an answer in the form of five point scale. The finding revealed that ethical decision making choice of higher secondary school students on the basic of celebrity end orbed advertisements are independent of gender.

Saidur(2013) conducted a study on personality and decision making styles of university students. The sample of 360 consisted of under graduate students from a large university in Dhaka Bangladesh. Two questionnaire named Big Five Inventory (BFI) developed by John and Srivastava (1999) and Melbourne decision making questionnaire (MDMQ) Developed by Mann et al (1997) were used as a tool. The findings indicated that neuroticism and conscientiousness predicted procrastination positively and negatively.

INDIAN STUDIES ON PROBLEM SOLVING ABILITY:

James, Marice (2005) conducted a study on select variables as determinants of the problem solving. The objective of the study was to explore the relationship among the variables namely, problem solving, Ability, Reasoning Ability and components of Reasoning Ability among 11th standard science group students. The sample consisted of 556 eleventh standard students from 10 higher secondary

schools of Pallakkad District in Kerala. The tool used for the study was problem solving Ability test by RoopRekhaGarg, Reasoning ability test in science by Anuradha Joshi and Bhuban Chandra Mahapatra (1994) Solat test by Venkatraman (1994) and personal data sheet. Reasoning Ability and Gender are found to be the most Significant Predictors of problem solving ability in science.

Lalithamma (2005) conducted a study on the procedures adopted and the difficulties Experienced by High and low Achievers in solving verbal problems in mathematics. The sample of the study consisted of 334 ninth standard students selected by the stratified sampling procedure from the schools in the Trivandram District. The tools used for the study were Questionnaire, observation, interview problem solving test. The findings revealed that the procedures adopted and the difficulties experienced by high and low achievers in mathematics in solving verbal problems.

Rani (2006) conducted a study on effectiveness of the synthetic and polya's Heuristic approaches on the Acquisition of problem solving skills in mathematics. The sample of the study was two different sections of students from two different schools in the same locality. The tool was used for the study was scholastic Achievement test. The findings revealed that the experimental students taught by polya's method were functioning well in the fair problem solving stages.

Devi (2009) conducted a study on the relationship between problem solving Ability and Academic achievement of secondary school students. The sample of 200 ninth standard students of which 100 boys and 100 girls were selected randomly from the both private and government secondary schools of

Davangersscity Karnadaka. The tool used for the study was the problem solving ability test development by L.N.DubeyJebalpur (1997). The findings revealed that there was no significant difference in problem solving ability and Academic Achievement of 9th standard students.

Biswajit (2009) conducted a study on problem solving skills in mathematics learning. The objective of the study was to study the cognitive ability students on mathematic problem solving. The sample of the study consisted of 60 students of class 8th were selected by simple random sampling technique. The scale used for the study was mathematical Ability Test. The finding revealed that those who could verbalize the process of solution were better at solving problems.

Behera (2009) conducted a study on problem solving skills in mathematical learning. The sample consisted of the study was 60 students of class 8th were selected by simple random sampling technique. The tools were used to collect data like mathematical Ability test. The major finding of the study was there is no significant difference between the mean of performance of boys and girls within each ability group in any of the component skills. The possibility, the significant of difference might have been reduced due to the fact that within each group the variations of boys and girls are quite large.

Manohara, Ramganesh (2009) conducted a study on creative problem solving Ability of standard 11th students. The study examined to identify the level of creative problem solving ability of eleventh standard students. The sample of the study was 200 students who were randomly selected from 5 higher secondary schools in Pondicherryregion. The tool used for the study was Passi-Usha test by

B.K.Passi and Usha Kumar in 1996. The findings revealed that the performance of the students in creative problem solving in average.

Jose, Thomas (2011) conducted a study on problem solving ability and Scholastic Achievement of secondary school students. The sample of the study included 320 secondary school students of Kottayam District. General data sheet and problem solving ability test was used as a tool. The findings revealed that there is no significant difference in the problem solving ability of secondary school learners with respect to gender locale and type of school.

Johnson, Ganesh (2013) conducted a study on Effectiveness of self-regulatory in science problem solving among the high school students. The objectives of the study were to measure self-regulation of high school students. The sample of the study was 40 high school students from standard 10th of S.R.V.S national higher secondary school karaikal. The tools used for the study was self-regulatory awareness inventory. The findings revealed that students of science could improve their problem solving using self-regulatory strategies with multimedia learning materials.

Deepa (2013) conducted a study on critical thinking and problem solving ability of higher secondary school students of Kanyakumari District. The objective of the study examined whether there were any significant difference in the mean scores of critical thinking ability and problem solving Ability based on gender and locale. The sample consisted of 214 students of eleventh standard from 10 schools of Kanyakumari District. The tools was used for collecting data were critical thinking ability test and problem solving ability test. The finding

revealed that a significant positive high correlating was found between critical thinking ability and problem solving ability of higher secondary school students.

Madhumathi, Ahmed (2014) conducted a study on assessing problem solving AbilitiersBased on polya's Approach. The sample consisted of the study was 480 students was selected from different schools of Bahadurapuramandal of Hyderbad district. The tool of the study scholastic achievement test. The findings revealed that almost 80% of the students were below average in their problem solving abilities.

FOREIGN STUDIES ON DECISION MAKING ABILITY

Engerman, Baily (2006) studied family decision making style peer group affiliation and prior academic achievement as predictors of the Academic Achievement of African, American students. A sample of 16,489 students was studied. They had taken a tool of national educators longitudinal study of 1988. The study found that prior academic performance and socio economic status (SES) predicted academic achievement.

Commendactor (2007) studied the relationship between female adolescent self-esteem decision making and contra captive behaviour. A sample of 98 female adolescents aged 14-17 years was studies. Global self-esteem scale prepared by Rosenberg's and decision making scale by the finders questionnaire was used as a tool. The study found that no significant associations or correlations were found between age global self-esteem, decision making self-esteem and decision making.

Osborne, Desmond (2010) conducted a study on the relationship of goal directedness generalized trust, and the manager's decision making style. Market tools INC recruited managers currently employed in the United States to participate in this study and 210 individuals completed this study. The tools used to measured goal directedness using the Snyder et.al (1991). Hope Scak generalized trust with the Rotter (1967), Interpersonal trust scale and Decision making style with the Scott and Bruce (1995), General Decision making style (GDMS) inventory. The findings revealed that there is no significant relation between the managers goal directedness score and avoidant decision making style dimensional score.

Makela, Panke (2011) career counseling as a career choice, career decision making self -efficiency and career barriers. The sample of 130 students persisted in the study including 33 in the treatment group and 97 in the control group. Social cognitive career theory (SSST lent, Brown, and Hackett 1994) as a primary frame work was used as a tool. The findings related to the process and out- comes of participating in individual career counseling led to suggestions of new theoretical connections regarding the ways in which career counselors influence students.

Bethencairt, Cabrera, Lidia (2011) conducted a study on personality and career decision making in under graduates. The sample of the study was 497 students in their final year of under graduate school. The tool was the questionnaire of efficient personality and the inventory of career factors. The finding revealed that an effective personality was tied to career decision making

based as much on one's knowledge of oneself as an understanding of the working world.

Swaminathan, Lahoti, Suchitra (2012) conducted a study on women's property, Mobility and Decision making. The total of 4,677 respondents were interviewed in rural areas with women making up 53 percent of the sample. The tool was used as logistic regression models. The findings of the study thus bring to focus the need to intensity policy interventions aimed at increasing women's assert base and bridging the gender assert gap

Lee, Beng, Keng (2012) conducted a study on children's use of Meta-cognitive in solving everyday problems; children's Monetary Decision Making. The total sample of 136 mixed ability fifth grade students from six different government primary schools in Singapore. The data was collected through focus group and one-to-one interviews. The study was found that children's monetary decision making is a complex process, that children often reflect upon unwise decisions and unpleasant experiences, and that parental involvement was an influential factor in their children's decision making.

FOREIGN STUDIES ON PROBLEM SOLVING ABILITY

Rai (2006) conducted the study on problem solving in science of creative and Non-Creative students. The sample for the study consisted of 200 students from 2 secondary schools. The tool was the creativity test of Medi. The 2 groups creative and non- creative students were tested on problem solving tasks. The findings of the study were that the creative and non-creative groups difference significantly in their problem solving skills.

Salami, Aremu (2006) conducted the study on relationship between problem solving ability and study behavior among school going adolescents in south western Nigeria. The total sample of 430 SS3 students randomly selected from 15 secondary schools in south western Nigeria. A problem solving Inventory and a study behavior inventory was used as the tools. The results obtained indicated that problem solving ability was significantly predictive of study behavior. Implications for counselors to use problem-solving activities in improving students study behavior were discussed.

Lee (2009) conducted the study on the effect of alternative solutions on problem solving performance. This exploratory study involved one teacher and 28 students. The teacher was the investigator and the subjects were from an eight-grade class of small size Junior high school in Taiwan. Alternative students' worksheets (ASW) were used as a tool. The results of the study indicated that students improved their problem solving performance after instruction in alternative solutions utilizing. ASW techniques and student who performed better on ASWs tended to improve more on their problem solving performance

Yeo (2010) conducted a study on secondary 2 student's difficulties in solving non-Routine problems. The sample of 56 secondary 2 students from 10 secondary schools in Singapore. The interview structure was developed from the Newman Error Analysis Guidelines (Newman 1983) and the Ransley's (1979) problem solving model. The findings revealed that a) Lack of comprehension of the problem posed. B) lack of strategy knowledge c) in ability translate the problem into mathematical from and d) inability to use the correct mathematics.

Culaste (2011) conducted a study on cognitive skills of Mathematical problem solving of grade 6 children. The sample of the study of 275 Grade 6 pupils of District-1, Quezon, Bukidreduring the academic year 2010-2011. The tools used for the cognitive tasks participation and evaluation tasks and interviews. Findings revealed that there was a significant difference prediction and evaluation of the grade 6 pupils on their cognitive skills.

Lee, Mon (2012) conducted the study on the middle school deaf students' problem solving behavior and strategy use. The participated in the study were deaf middle school student attending a residential stale school for the deaf. The study used grounded theory to shape it methodological frame work. The findings revealed that teachers understand and address the student characteristics and provide more challenging problems with variety methods of representing the problems.

Kahyaoglce (2012) conducted the study on teacher candidates attitude towards problem based learning and problem solving skills. The study was carried out with a total of 199 3rd and 4th grade teacher candidates (100 female 99 male) from elementary department of faculty of education out Sirt University in Turkey. The tools was used as the problem solving inventory (Hepprer and Peterson (1982) and the problem based learning attitude scale (Turan and Demirel 2010). The study found that there is no significant and negative relation between the elementary teacher candidate's problem solving skills and attitude towards problem based learning.

Sajadi, Amiripour, Malkhalifeh (2013) conducted the study on the examining mathematical word problems solving ability under Efficient Representation Aspect. The sample of 40 students is selected at girly elementary school. The data was collected through math exam and spearman test. The findings revealed that there is significant and direct relation between efficient representation and efficient word problem solving ability.

Critical Review

The investigator reviewed of 33 studies related to Decision making ability and problem solving ability of higher secondary school students. Among them 18 were related to Indian studies and 15 were related to aboard studies. Most of the studies have employed survey method. In many of the studies random sampling technique has been used for selecting sample. So for as wide range of factors have been investigated by many in relation to decision making ability and problem solving ability. In this study, the researcher tried to find out relationship between the decision making ability and problem solving ability of higher secondary school students in kanyakumari district

CHAPTER-III

METHODOLOGY

- **Introduction**
- **Method adopted for the present study**
- **Sample used for the present study**
- **The tools used in the study**
- **Statistical Techniques adopted**

CHAPTER - III

METHODOLOGY

Research methods are basically concerned with observation of reality, defining the problem and its dimension, a planned approach towards analysis of the problem, interpretation of information and drawing conclusions. Though this process a researcher attempts to acquire and understanding so the problem and make concrete suggestions towards its solution. The success depends upon sensitivity power of observation, logical thinking process and ability to draw conclusions assimilating a large mass of information.

Research is most essential and powerful tool for the progress of the democratic society. Without research, development in various spheres of life and law would not have been possible. Research is more systematic activity that instructed towards discovery of the various facts of an organized society. Research leads towards information and knowledge. It eradicates ignorance and candle the light to find the truth against all bias. Research helps to find solution for innumerable legal problems of life. It is based on experience with empirical evidence. Research rejects dogmas and answers by making accurate observation. It is a quest to answer unsolved question by pushing back the hurdles of ignorance. It is based on courage and confidence. It is carried with patience and finds spectacular result against disappointment and anarchy. It carefully records and reports the finding in scholarly manner. According to Encyclopedia Britannica- Research means “The act of searching into a matter closely and carefully, inquiry directed to the discovery of truth and in particular the trained scientific

investigation of the principles and facts of any subject, based on original and first hand study of authorities or experiment". Webster's International Dictionary defines- Research is "a careful, critical inquiry or explanation in seeking facts or principles, diligent investigation in order to ascertain something".

THE METHOD USED IN THE PRESENT STUDY

For the study the investigator adopted normative survey method.

NORMATIVE SURVEY METHOD

The term 'normative survey' is generally used for the type of research which proposes to ascertain what is normal or typical at present time. The normative survey method of educational research is very common. It is a method of investigation which attempt to describe and interpret what exists at present in the form of conditions, practices, processes, trends, attitudes, beliefs, etc. It is concerned with the phenomena that are typical of the normal conditions.

The sample:

The small proportion of a population selected for observation and analysis is called the sample. A sample reflects the characteristics, which it is selected. The sample of the present study consisted on 500 higher secondary school students. The investigator has adopted simple random sampling method. While selecting the subjects due representatives were given to factors such as Gender, Locality of Residence, Locality of School, medium, Type of school, Type of Management, Educational qualification of father and Educational qualification of mother, Order of birth, Type of family, occupation of father and mother.

Distributions of sample based on the sub-variables are given below:

Table - 3.1Gender wise distribution of sample.

Gender	Number of students	Percentage
Male	202	50.50
Female	198	49.50
Total	400	100

The sample consists of both male (202) and female (198) students. The percentages corresponding to male and female students are 50.50% and 49.50% percentage respectively.

Table - 3.2 Locality of residence wise distribution of sample

Locality of residence	Number of students	Percentage
Rural	367	73.40
Urban	133	26.60
Total	500	100

The sample consists of both rural (367) and urban (133) area students. The percentages corresponding to rural and urban students are 73.40% and 26.60% percentage respectively

Table - 3.3 Locality of school wise distribution of sample

Locality of school	Number of students	Percentage
Rural	214	42.80
Urban	286	57.20
Total	500	100

The sample consists of both rural (214) and urban (286) school students. The percentages corresponding to rural and urban school students are 42.80% and 57.20% percentage respectively.

Table - 3.4 Medium wise distribution of sample

Medium	Number of students	Percentage
Tamil	220	44.00
English	280	56.00
Total	500	100

The sample consists of both Tamil (202) and English (198) students. The percentages corresponding to Tamil and English medium students are 50.50% and 49.50% respectively.

Table - 3.5 Type of school wise distribution of sample

Type of school	Number of students	Percentage
Boys	52	10.40
Girls	31	6.20
Co-education	417	83.40

The sample consists of Boys(52), Girls(31) and Coeducation(417) school students. The percentages corresponding to the students are Boys 10.40%, Girls 6.20% and Coeducation 83.40% respectively .

Table - 3.6 Type of Management wise distribution of sample.

Type of management	Number of students	Percentage
Government	148	29.60
Aided	269	53.80
Unaided	83	16.60

The sample consists of Government(148), Aided(269) and Unaided(83) school students. The percentages corresponding to the students are Government 29.60%, Aided 53.80% and Unaided 16.60% respectively.

Table - 3.7 Educational Qualification of Father wise distribution of sample

Qualification of Father	Number of students	Percentage
Below SSLC	264	52.80
Above SSLC	155	31.00
Graduate	81	16.20

The sample consists of students whose father qualification is below SSLC (264), Above SSLC(155) and Graduate(81). The percentage corresponding to father's qualification below SSLC 52.80% , Above SSLC 31.00 % and Graduate 16.20% respectively.

Table -3.8 Educational Qualification of Father wise distribution of sample

Qualification of Mother	Number of students	Percentage
Below SSLC	247	49.40
Above SSLC	166	33.20
Graduate	87	17.40

The sample consists of students whose mothers qualification is below SSLC (247), Above SSLC(166) and Graduate(87). The percentage corresponding to mother's qualification below SSLC 49.40% , Above SSLC 33.20 % and Graduate 17.40% respectively

Table - 3.9 Distribution of sample based on Order of birth

Order of birth	Number of students	Percentage
First	232	46.40
Second	194	38.80
Third and above	74	14.80

The sample consists of order of birth first(232), second(194)and Third and above(74) students. The percentage corresponding to the students have the order of birth first 46.40%, second 38.80% and third and above 14.80% respectively

Table -3.10 Distribution of sample based on Type of family

Type of family	Number of students	Percentage
Nuclear	386	77.20
Joint	114	22.80

The sample consists of Nuclear(386) and joint(114) family students. The percentage corresponding to the students are Nuclear 77.20% and 22.80% respectively.

Table:3.11Distribution of sample based on occupation status of father

Occupation status of father	Number of students	Percentage
Unemployed	234	46.80
Government	62	12.40
Private	204	40.80

The sample consists of students whose fathers have the occupation Unemployed(234), Government(62) and Private(204). The percentage corresponding to father's occupation Unemployed 46.80% , Government employee 12.40 % and Private 40.80% respectively

Table:3.12Distribution of sample based on occupation status of mother

Occupation status of father	Number of students	Percentage
Unemployed	407	81.40
Government	33	6.60
Private	60	12.00

The sample consists of students whose mothers have the occupations Unemployed (407), Government(33) and Private(60). The percentage corresponding to mother's occupation unemployed 81,40% , government employee6.60 % and Private employee12.00% respectively

The Tools Used

For collecting data required for the study, one have to use various scientific devices for gathering facts related to the study. These devices are called tools. The investigator depending on the nature of study used the following tools for data collection.

i) Decision making ability Test

To study the Decision making ability of higher secondary school students, the investigator constructed and validated the decision making ability test. The development of the test is given below.

The tool for the present study, prepared by L. Salina Theres and Dr. R.P. Deepa meant to find out the decision making ability of higher secondary school students. The major steps followed in construction of this tool are,

1. Planning of the test
2. Item Writing
3. Item Editing
4. Arrangement of Items
5. Preliminary tryout
6. Draft form of the test
7. Final tryout
8. Scoring
9. Item Analysis
10. Item Selection
11. Format of the final scale
12. Establishing reliability and validity of the test

i. Planning of the test

The tool for the present study prepared by L. Salina Theres and Dr. R.P. Deepa (2013-2014) aims at measuring the Decision making ability of higher secondary

school students in Kanyakumari District. Due considerations were given to variables tested and the different aspects involved.

ii. Item Writing

Writing of suitable item is one of the important steps in the construction of any research tool. After a thorough and careful study of the literature available on decision making ability of higher secondary school students ,the investigator Collected Materials on different dimensions on decision making ability and prepared a large number of positive and negative items. The method used in item writing was the fixed response method. The respondent must select one response out of the 5 given responses.

The variables related to the questionnaire were as follows:

a) Establishing the positive decision making environment
b) Deciding
c) Evaluating
d) Generating potential solution
e) Communicating and implementing

iii. Item Editing

Editing the items needs much care and it is the process of checking and scrutinizing items. The items were referred to the experts for suggestion and modification. As per the suggestion, the ambiguous items were rewritten in simple and meaningful language.

iv. Item Arrangement

All the items were grouped, ordered and located in a random manner in order to arouse interest and to maintain attention for responding.

v. Preliminary Try Out

The preliminary tryout of the test was arranged to find out the weakness and workability of the items. The difficulties in responding the items and a rough of the time-limit for responding the items were noted. This step helped the investigator to modify certain items which were vague and questionable. For this purpose the test was given to 400 students.

vi. Draft Form of the Test

The first draft was prepared by printing the items with the provision to mark responses. It was printed both in English and Tamil. Necessary instructions for the respondents were also printed. A sample copy of the Draft form of the test is given as Appendix-B.

vii. Final Tryout

The tool was administered to a sample of 500Higher secondary School students of various schools. Sample copy of the Draft form of the test given Appendix-C.

viii. Scoring

The collected response sheets were scored with the help of a scoring key prepared by the investigator The response Sheets were scored by assigning a score of ‘5’ for “strongly agree”, ’4’ for “agree”,”3” for “undecided”,”2” for “disagree” and “1” for “strongly disagree” for positive items. The order of assigning scores was reversed for negative items.

ix. Item Analysis

Item analysis is an important step in a test construction. Item can be analyzed qualitatively in terms of their content and quantitatively in terms of their statistical properties. Qualitative analysis includes the consideration of content validity and the evaluation of item in terms of effective item writing procedures. Quantitative analysis on other hand includes the measurement of item difficulty and item discrimination power. Both the variability of any test depends ultimately on the characteristics of its items. High reliability and validity can be built into a test is advance through item analysis.

The method of item analysis used in the case of present investigation is one developed by Mathew (1982) called the "Mathew Item Analysis Table". This table gives item criterion correlation and percentages of rest, making the key answer. One of the advantages of phi- coefficient is that any convenient tail. Proportion can be made use of in order to use the same table. It is recommended regardless of the sample sizes.

The responses sheets were arranged in the order of the criterion score. The criterion score in the total sheets having the highest criterion were taken and it constitutes the upper tail. Similarly hundred response sheets having the lowest scores were taken forming the lower tail.

The final percentage needed for reading the item indices from the tables are the following.

P_L: Percentage of individual in the lower tail marking the keyed answer.

P_U: Percentage of individual in the upper tail marking the keyed answer.

In the "Mathew Item Analysis Table" all indices for the same value of the P_L have been grouped together. So in order to read the indices for the same value item, the P_L value of the given item was located first them in that session the P_U value of the items along the left margin was located and the corresponding Phi and P values were read. Whenever the P_L value was larger than the P_U value, P_L and P_U values were interchanged while reading the indices and then a negative sign was attached.

x. Item Selection

From the item having higher correlation values (phi-value above 0.2) the required number of items was selected. The special future about the 'phi' value is that since 'phi' values tend to be high for items having medium 'p' value selection based on 'phi' value alone would give the desired result. Items with (phi value below 80) the level of significance is not considered usually.

When 'phi' values of most items were high and a number of items larger, items with some spread of 'p' values would be describe. It may be maintained here that 'phi' values were computed for every combination of P_L and P_U values by means of Guilford (1954) formula.

xi Format of the final inventory:

The final inventory consists of 44 items with almost in simple and meaningful way. A copy of the final inventory is attached in Appendix-E.

Reliability of the test:

In the present investigation, the reliability co-efficient was found out by Split-Half method. It measures the degree of homogeneity of items. The reliability coefficient of the test is calculated using Spearman Brown Prophecy formula found to be showing satisfactory reliability (N=60).

Table - 3.13 Reliability Analysis

Number of sample	60
Number of items	44
Correlation between odd half and even half	0.6163
Reliability coefficient	0.7626

Validity of the test:

Face Validity:

The tool was submitted to panel experts and in their opinion it appeared to measure the objective of the tool. A close look on the items of the inventory reveals that each and every item is capable of reflecting the decision making ability of higher secondary students. This provided face validity for the tool.

Content Validity:

Content validity of the test was also established by verifying the comprehensiveness of coverage of the content of the test using authentic literature and opinion of experts on the basis of the experts from relevant field that the tool has sufficient coverage of its contents.

ii) Problem solving ability test

Problem solving ability test in mathematics was prepared by Dr.R.P.Deepa and Dr. S. Sadanandan(2010).this test is aimed at measuring ability in problem solving .the test consisted of three areas namely Mathematics formulation, Arithmetic reasoning and Numerical ability. 58 questions were given in the test. It was a multiple choice type and for each questions four answers were given. People had to select the correct answer and in the box.The copy of the inventory is attached in the Appendix-D

Reliability and validity of the test:

The reliability of the test was found by using Split-half method. The reliability of problem solving was found to be 0.8561.Hence the tool was highly reliable for the present study. The opinion of the experts showed the test has adequate face and content validity also concurrent validity is established .

Scoring the test

For each correct responses one mark was given and for each wrong response zero mark was given. A scoring key was used by the investigator for easy and quick scoring. Scoring key given in the Appendix-F

iii) General Information Sheet

General information sheet is prepared to collect data regarding Gender, Locality of Residence, Locality of School, medium, Type of school, Type of Management, Educational qualification of father and Educational qualification of mother, Order of birth, Type of family, occupation of father and mother. A specimen copy of the same given as Appendix-A

iv) Data collection procedure

Data were collected from high school students from various schools. The investigator visited the different schools after seeking permission from the principals of school concerned. The tools were administered to class xi of selected higher secondary school students. A rapport was established with the respondents before the administration of the tool. The students were first asked to fill up the general information sheet. After filling all the items in the general information sheet the investigator gave necessary directions to fill completely and correctly all the items of decision making ability test and problem solving ability test.. They were asked to fill all the items in each section by putting a tick mark against the corresponding responses given in the respective tests. After completing the items by all the students, the investigator carefully collected all the tests along with the general information sheet.

v) Statistical techniques used:

Statistical techniques are very important for any research. The relevant statistical techniques help the investigator to analyses and interpret the data meaningfully in the study. Here in this present study the investigator used following statistical techniques:

1. Percentage
2. Arithmetic Mean
3. Standard Deviation
4. t-test
5. ANOVA

a) Percentage:

Percentage helps in the comparative study of fractions. It is always means per hundred and hence it is calculated on 100.

b) Mean:

It is the most widely used measure for representing entire data by one value. It is the centre of gravity in distribution and is useful for further statistical interpretation.

Standard Deviation

Standard deviation provides a standard and for measuring distances of various scores from their mean. It is the one of the very useful measure of dispersion and it measure the scatteredness of the values.

c) t-Test (Test of significance):

For finding the significant level of difference between two groups of population, t-test was used. For calculating t-values the scores of mean and standard deviation are needed. If the calculated t-value is 2.58 and above then the significant difference at 0.01 levels and if the value is below 1.96 the difference is not significant.

d) ANOVA (Analysis of variance):

To find out whether there is any significant difference between the means of two random samples, we use the t-test. The analysis of variances and the corresponding test of significances based up on F - distribution is used in their

case. The analysis variance leads with variances rather than with standard deviations and standard errors. The investigator has used the following formula for calculating the ANOVA.

$$\text{F - ratio} = \frac{\text{Mean Square variance between the group}}{\text{Mean Square variance within the group}}$$

Scheffe's Procedure:

Significance, obtained as the results of ANOVA, does not point out which of the three groups differ among themselves. In such cases, the comparison of the differences between means for any two groups is done using Scheffe's procedure (Scheffe's 1957). Scheffe's test is one of the well known multiple group comparison test.

CHAPTER-IV

ANALYSIS AND INTERPRETATION OF DATA

- **Percentage wise analysis**
- **Differential analysis**
- **Correlation analysis**
- **Regression analysis**

CHAPTER-IV

ANALYSIS AND INTERPRETATION OF DATA

Analysis of data means studying the organized material in order to discover inherent facts. The data are studied from as many angles as possible to explore the new facts. According to Francis Rommel "The analysis and interpretation of data possession of the researches and his subjective reaction and reaction and desire to derive from the data the inherent meanings in their relations to the problem". To avoid making conditions or interpretations from insufficient or invalid data the final analysis must be anticipated in detail when plans are being for collecting information. Wilkinson and Bhandakar (1987) said," Analysis of data involves a number of closely related operators that are performed with the purpose of summarizing the collected data are organized in such a names that they will yield answer to the researches questions if no such question by hypothesis had initiated the study".

Descriptive statistics for decision making ability of Higher Secondary School students

Table 4.1 Descriptive Statistic for Decision making ability.

Mean	155.26
Std Deviation	16.72
Count	500

From the table 4.1. It is clear that the total number of sample for the present study was 500.The Arithmetic mean score obtained for the total sample was 155.26 and standard deviation was 16.72

Percentage wise analysis distribution of decision making ability of higher secondary school students

Table 4.2 Percentage wise analysis distribution of different levels of Decision making ability and its dimensions among higher secondary school students

Dimensions	Levels	Count	Percent
Decision making ability	Low	82	16.40
	Medium	340	68.00
	High	78	15.60
	Total	500	100.0
Establishing the positive decision making environment	Low	94	18.80
	Medium	317	63.40
	High	89	17.80
	Total	500	100.0
Deciding	Low	72	14.40
	Medium	339	67.80
	High	89	17.80
	Total	500	100.0
Evaluating	Low	86	17.20
	Medium	329	65.80
	High	85	17.00
	Total	500	100.0
Generating potential solution	Low	75	15.00
	Medium	334	66.80
	High	91	18.20
	Total	500	100.0

Communicating and implementing	Low	77	15.40
	Medium	336	67.20
	High	87	17.40
	Total	500	100.0

From the above table 4.2 it is clear that most of the higher secondary school students have medium level of decision making ability and its dimensions.

Comparison of mean scores of Decision making ability of higher secondary school students based on background variables.

Gender wise comparison of total as well as dimension wise mean scores of Decision making ability among higher secondary school students.

Null hypothesis : 1

There is no significant difference in the total as well as dimension wise mean scores of decision making ability of male and female higher secondary school students.

Table : 4.3 Gender wise mean, standard deviation, number and t-values of decision making ability and its dimensions among higher secondary school students.

Dimensions	Gender	Mean	S.D	N	t	p	Remark
Decision making ability	Male	154.38	16.73	248	1.171	0.242	NS
	Female	156.13	16.69	252			
Establishing the positive decision making environment	Male	27.21	4.23	248	0.190	0.850	NS
	Female	27.28	4.02	252			
Deciding	Male	33.90	4.83	248	0.457	0.648	NS
	Female	34.10	4.96	252			
Evaluating	Male	30.29	4.59	248	2.259	0.024	Sig. at

	Female	31.25	4.91	252			0.05 level
Generating potential solution	Male	27.19	4.91	248	0.884	0.377	NS
	Female	27.58	4.96	252			
Communicating and implementing	Male	35.79	5.89	248	0.261	0.794	NS
	Female	35.93	6.11	252			

The calculated value (t=1.171, p>0.05) is not significant at any level. Therefore the null hypothesis, "There is no significant difference in the mean scores of Decision making ability of male and female higher secondary school students" is accepted. Thus from the total mean scores it is confirmed that male and female higher secondary school students possess more or same level of Decision making ability.

In dimension wise, the corresponding t-values are (t=0.910, 0.457, 0.884, 0.261, P>0.05) respectively are not significant at any level. Hence the null hypothesis "There is no significant in the dimension wise mean scores of decision making ability of male and female higher secondary school students is accepted.

But for the dimension Evaluating the t-value (t=2.259,P<0.05) is significant at 0.05 level. Hence the null hypothesis is rejected.

Locality of residence wise comparison of mean scores of Decision making ability and its dimensions among higher secondary school students.

Null Hypothesis : 2

There is no significant difference in the total as well as dimension wise mean scores of Decision making ability of higher secondary school students whose residence are in rural and urban area.

Table : 4.4 Locality of residence wise mean, standard deviation, number and t-value of decision making ability and its dimensions among higher secondary school students.

Dimensions	Locality of Residence	Mean	S.D	N	t	P	Remark
Decision making ability	Rural	154.19	16.00	248	2.259	0.024	Sig at 0.05 level
	Urban	158.24	18.30	252			
Establishing the positive decision making environment	Rural	27.15	4.03	248	0.832	0.406	NS
	Urban	27.51	4.36	252			
Deciding	Rural	33.77	4.82	248	1.725	0.085	NS
	Urban	34.64	5.04	252			
Evaluating	Rural	30.66	4.72	248	0.851	0.395	NS
	Urban	31.08	4.93	252			
Generating potential solution	Rural	27.17	4.88	248	1.599	0.110	NS
	Urban	27.98	5.05	252			
Communicating and implementing	Rural	35.44	6.05	248	2.711	0.007	Sig at 0.01 level
	Urban	37.03	5.70	252			

The calculated value ($t=2.259$, $p<0.05$) is significant at 0.05 level. Therefore the null hypothesis, “There is no significant difference in the mean

scores of Decision making ability of higher secondary school students whose residence are in rural and urban area " is rejected. Thus from the mean scores it is confirmed that rural and urban area higher secondary students possess differ in their Decision making ability.

In dimension wise, the corresponding t values are (t=0.832, 1.725,0.851,1.599, P>0.05) respectively are not significant at any level. Hence the null hypothesis "There is no significant difference in the dimension wise mean scores of decision making ability of rural and urban area higher secondary students" is accepted. That is rural and urban area higher secondary students possess more or same level of Decision making ability based on its dimensions. But for the dimension communicating and implementing the t-value (t=2.711,P<0.01) is significant at 0.01 level. Hence the null hypothesis is rejected. Thus from the mean scores it is confirmed that rural and urban area students differ in communicating and implementing of Decision making ability.

Locality of school wise comparison of mean scores of decision making ability and its dimensions among higher secondary school students.

Null Hypothesis : 3

There is no significant difference in the total as well as dimension wise mean scores of Decision making ability of rural and urban school higher secondary students.

Table : 4.5 Locality of school wise mean, standard deviation, number and t-value of decision making ability and its dimensions among higher secondary school students.

Dimensions	Locality of Residence	Mean	S.D	N	t	p	Remark
Decision making ability	Rural	154.16	15.45	214	1.302	0.194	NS
	Urban	156.09	17.59	286			
Establishing the positive decision making environment	Rural	27.00	3.69	214	1.156	0.248	NS
	Urban	27.42	4.42	286			
Deciding	Rural	33.57	4.55	214	1.728	0.085	NS
	Urban	34.32	5.12	286			
Evaluating	Rural	30.75	4.37	214	0.095	0.925	NS
	Urban	30.79	5.06	286			
Generating potential solution	Rural	27.21	4.79	214	0.677	0.499	NS
	Urban	27.51	5.05	286			
Communicating and implementing	Rural	35.62	5.55	214	0.808	0.419	NS
	Urban	36.05	6.31	286			

The calculated value ($t=1.302$, $p>0.05$) is not significant at any level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of rural and urban area school higher secondary students” is accepted. Thus from the mean scores it is confirmed that rural and urban school higher secondary students possess same level of Decision making ability.

In the dimension wise, also the corresponding t- values are (t=1.156, 1.728, 0.095, 0.677,0.808 P>0.05) respectively are not significantly at any level. Hence the null hypothesis “There is no significant difference in the dimension wise mean scores of Decision making ability of rural and urban area school higher secondary students” is accepted .Thus from the mean scores it is confirmed that rural and urban school higher secondary students possess same level of Decision making ability for the dimensions

Medium wise comparison of mean scores of Decision making ability and its dimensions among higher secondary school students.

Null Hypothesis : 4

There is no significant difference in the total as well as dimension wise mean scores of Decision making ability of Tamil and English medium higher secondary school students.

Table : 4.6 Medium wise mean, standard deviation, number and t-values of decision making ability and its dimensions among higher secondary school students.

Dimensions	Medium	Mean	S.D	N	t	p	Remark
Decision making ability	Tamil	152.6	16.16	220	3.206	0.001	Sig at 0.01 level
	English	157.36	16.88	280			
Establishing the positive decision making environment	Tamil	27.02	4.07	220	1.079	0.281	NS
	English	27.42	4.17	280			
Deciding	Tamil	33.10	4.90	220	3.686	0.000	Sig at 0.01 level
	English	34.71	4.78	280			
Evaluating	Tamil	30.56	5.08	220	0.872	0.384	NS
	English	30.94	4.51	280			
Generating potential solution	Tamil	26.59	5.09	220	3.194	0.001	Sig at 0.01 level
	English	28.01	4.73	280			
Communicating and implementing	Tamil	35.33	5.93	220	1.766	0.078	NS
	English	36.28	6.02	280			

From the table it clear that the calculated value ($t=3.206$, $p<0.01$) is significant at 0.01 level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of Tamil and English medium higher secondary schoolstudents”is rejected . Thus from the mean scores it is confirmed that Tamil and English medium students possess differ in theirof Decision making ability.

In dimension wise, the corresponding t-values are ($t=1.079$, 0.872, 1.766 $P>0.05$) respectively are not significant at any level. Hence the null hypothesis,

“There is no significant difference in the dimension wise means scores of Decision making ability of Tamil and English medium higher secondary school students” is accepted. Thus from the mean scores it is confirmed that Tamil and English medium higher secondary school students possess more or same level of Decision making ability.

But for the dimensions deciding and Generating Potential solution the t-value (t=3.686, 3.194 P<0.01) are not significantly at any level. Hence the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of Tamil and English medium higher secondary school students ” is rejected.

Type of school wise comparison of mean scores of Decision making ability and its dimensions of higher secondary school students.

Null Hypothesis : 5

There is no significant difference in the total as well as dimension wise mean scores of Decision making ability of Boys, Girls and Co-education higher secondary school students.

Table : 4.7 Type of school wise mean, standard deviation, sum of squares, degrees of freedom and F-values of Decision making ability and its dimensions.

Dimensions	Type of school	Mean	S.D	source	Sum of squares	df	Mean squares	F	P	Remark
Decision making ability	Boys	159.75	20.45	Bet Gp	3789.60	2	1894.80	6.941	0.001	Sig at 0.01 level
	Girls	145.87	15.41	Within Gp	135677.55	497	272.99			
	Co-edn	155.40	16,05	Total	139467.15	499				
Establishing the positive decision making environment	Boys	26.96	5.34	Bet Gp	127.65	2	63.83	3.796	0.023	Sig at 0.05 level
	Girls	25.35	4.8	Within Gp	8356.58	497	16.81			
	Co-edn	27.42	3.86	Total	8484.23	499				
Deciding	Boys	35.62	4.92	Bet Gp	264.8	2	132.39	5.640	0.004	Sig at 0.01 level
	Girls	31.97	4.54	Within Gp	11667.2	497	23.48			
	Co-edn	33.95	4.86	Total	11932.0	499				
Evaluating	Boys	30.90	4.62	Bet Gp	136.47	2	68.24	3.021	0.050	Sig at 0.05 level
	Girls	28.74	5.33	Within Gp	11224.99	497	22.59			
	Co-edn	30.91	4.72	Total	11361.46	499				
Generating potential solution	Boys	28.75	5.11	Bet Gp	146.0	2	73.00	3.021	0.050	Sig at 0.05 level
	Girls	26.16	3,85	Within Gp	12010.3	497	24.17			
	Co-edn	27.30	4,96	Total	12156.3	499				
Communicating and implementing	Boys	37.52	7.09	Bet Gp	295.89	2	147.94	4.170	0.016	Sig at 0.05 level
	Girls	33.65	5.67	Within Gp	17633.59	497	35.48			
	Co-edn	35.82	5.82	Total	17929.48	499				

From the table it is clear that the calculated value ($F=6.941$, $p\leq0.01$) is significant at 0.01 level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of Boys, Girls and Co-education higher secondary school students ” is rejected . That is Decision making ability of higher secondary school students statistically differ in their Type of school.

In dimension wise, the corresponding F-values are (F=3.796, 5.640, P<0.01 & F=3.021, 3.021, 4.170, P<0.05) is significant at 0.01 level. Therefore the null hypothesis, "There is no significant difference in the dimension wise mean scores of Decision making ability of Boys, Girls and Co-education higher secondary school students " is rejected . That is Decision making ability of higher secondary school students statistically differ in their Type of school for the dimensions.

The result do not help to identify exactly the pairs of groups which differ statistically. Hence scheffe's multiple comparison is used for further analysis.

Table : 4.8 Pair wise comparison of total mean scores of scheffe's procedure for Decision making ability based on type of school

Type of school	N	Pair	P(sheffe)	Remark
Boys(A)	52	A Vs B	0.001	Sig at 0.01 level
Girls(B)	31	B Vs C	0.009	Sig at 0.01 level
Co-education(C)	417	A Vs C	0.202	NS

The result showed that the two pairs boys and Girls(A Vs B) school students, Girls and Coeducation(B Vs C) have significant difference in their decision making ability. The other Pair Boys and Co-education (A Vs C) do not differ in their decision making ability. The mean value (159.75) show that Boys school students possess more favorable decision making ability than Girls and Co-education students.

Table : 4.9 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on type of school in the dimension establishing the positive decision making environment

Type of school	N	Pair	P(sheffe)	Remark
Boys(A)	52	A Vs B	0.225	NS
Girls(B)	31	B Vs C	0.026	Sig at 0.05 level
Co-education(C)	417	A Vs C	0.748	NS

For the dimension Establishing the positive decision making environment , the result showed that the two pairs boys and Girls(A Vs B) and Boys and Coeducation(AVs C) school students do not differ in their decision making ability. The other Pair Boys and Co-education (A Vs C) do not differ in their decision making ability. The mean value (27.42) show that Boys school students possess more favorable decision making ability than Girls and Co-education school students.

Table : 4.10 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on type of school in the dimension Deciding.

Type of school	N	Pair	P(sheffe)	Remark
Boys(A)	52	A Vs B	0.004	Sig at 0.01 level
Girls(B)	31	B Vs C	0.091	NS
Co-education(C)	417	A Vs C	0.065	NS

For the dimension deciding, the result showed that the two pairs Girls and Co-education(B Vs C) and Boys and Coeducation(AVs C) school students do not

differ in their decision making ability. The other Pair Boys and Girls (A Vs B) have significance difference in their decision making ability. The mean value (35.62) show that Boys school students possess more favorable decision making ability than Girls and Co-education school students.

Table : 4.11 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on type of school in the dimension Evaluating.

Type of school	N	Pair	P(sheffe)	Remark
Boys(A)	52	A Vs B	0.136	NS
Girls(B)	31	B Vs C	0.050	Sig at 0.01 level
Coeducation(C)	417	A Vs C	0.000	NS

For the dimension evaluating, the result showed that the two pairs Boys and Girls(A Vs B) and Boys and Coeducation(AVs C) school students do not differ in their decision making ability .The other Pair Girls and Coeducation (B Vs C) have significance difference in their decision making ability. The mean value (30.91) show that Coeducation school students possess more favorable decision making ability than Boys and Girls school students.

Table : 4.12 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on type of school in the dimension Generating Potential Solution.

Type of school	N	Pair	P(sheffe)	Remark
Boys(A)	52	A Vs B	0.049	Sig at 0.01 level
Girls(B)	31	B Vs C	0.461	NS
Coeducation(C)	417	A Vs C	0.135	NS

For the dimension generating potential solution ,the result showed that the two pairs Girls and Coeducation(B Vs C) and Boys and Coeducation(AVs C) school students do not differ in their decision making ability .The other Pair Boys and Girls (A Vs B) school students have significance difference in their decision making ability. The mean value(28.75) show that Boys school students possess more favorable decision making ability than Girls and Coeducation school students

Table : 4.13 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on type of school in the dimension Communicating and implementing.

Type of school	N	Pair	P(sheffe)	Remark
Boys(A)	52	A Vs B	0.017	Sig at 0.05 level
Girls(B)	31	B Vs C	0.148	NS
Coeducation(C)	417	A Vs C	0.153	NS

For the dimension Communicating and implementing, the result showed that the two pairs Girls and Coeducation (B Vs C) and Boys and Coeducation (A Vs C) school students do not differ in their decision making ability. The other Pair

Boys and Girls (A Vs B) school students have significance difference in their decision making ability. The mean value (37.52) show that Boys school students possess more favorable decision making ability than Girls and Coeducation school students

Type of Management wise comparison of mean scores of Decision making ability and its dimensions of higher secondary school students.

Null Hypothesis : 6

There is no significant difference in the total as well as dimension wise mean scores of Decision making ability of Government, Aided and Unaided higher secondary school students.

Table : 4.14 Type of Management wise mean, standard deviation, sum of squares, degrees of freedom and F-values of Decision making ability and its dimensions.

Dimensions	Type of Mgt	Mean	S.D	source	Sum of squares	df	Mean squares	F	P	Remark
Decision making ability	Govt	150.39	17.28	Bet Gp	5004.39	2	2502.19	9.249	0.00	Sig at 0.01 level
	Aided	157.42	16.6	Within Gp	134462.8	497	270.55			
	Unaided	156.92	14.28	Total	139467.2	499				
Establishing the positive decision making environment	Govt	26.39	4.48	Bet Gp	196.91	2	98.46	5.904	0.003	Sig at 0.01 level
	Aided	27.80	4.05	Within Gp	8287.32	497	16.67			
	Unaided	26.96	3.39	Total	8484.23	499				
Deciding	Govt	33.4	4.97	Bet Gp	76.4	2	38.2097	1.602	0.203	NS
	Aided	34.23	5.07	Within Gp	11855.581	497	23.85			
	Unaided	34.31	4.05	Total	11932	499				
Evaluating	Govt	29.11	4.92	Bet Gp	604.29	2	302.14	13.96	0.00	Sig at 0.01 level
	Aided	31.61	4.83	Within Gp	10757.2	497	21.64			
	Unaided	31.04	3.39	Total	11361.5	499				
Generating potential solution	Govt	26.24	4.9	Bet Gp	296.7	2	148.361	6.217	0.002	Sig at 0.01 level
	Aided	27.72	5.09	Within Gp	11859.549	497	23.86			
	Unaided	28.33	4.11	Total	12156.272	499				
Communicating and implementing	Govt	35.25	6.12	Bet Gp	82.82	2	41.41	1.153	0.316	NS
	Aided	36.06	6.09	Within Gp	17846.7	497	35.91			
	Unaided	36.31	5.41	Total	17929.5	499				

From the table it is clear that the calculated value ($F=9.249$, $p<0.01$) is significant at 0.01 level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of Government, Aided and Unaided higher secondary school students ” is rejected . That is Decision

making ability of higher secondary school students statistically differ with their Type of Management.

In dimension wise the corresponding F- values are (F=1.602, 1.153 , p>0.05) not significant at any level. Therefore the null hypothesis, “There is no significant difference in the dimension wise mean scores of Decision making ability of Government, Aided and Unaided higher secondary school students ” is accepted . Thus from the mean scores it is confirmed that Government , Aided and Unaided higher secondary school students possess more or same level of decision making ability.

But for the other dimensions the corresponding F-values (F=5.904, 13.96, 6.217, P<0.01)respectively are significantly at 0.01 level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of Government, Aided and Unaided higher secondary school students ” is rejected . That is Decision making ability of higher secondary school students statistically differ with their Type of Management.

The result do not help to identify exactly the pairs of groups w the pairs of groups which differ statistically. Hence scheffe’s multiple comparison is used for further analysis.

Table : 4.15 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on type of Management.

Type of Mangement	N	Pair	P(sheffe)	Remark
Government(A)	148	A Vs B	0.000	Sig at 0.01 level
Aided(B)	269	B Vs C	0.974	NS
Unaided(C)	83	A Vs C	0.015	Sig at 0.05 level

The result showed that the two pairs Government and Aided (A Vs B) and Government and Unaided (A Vs C) have significant difference in their decision making ability. The other Pair Aided and Unaided (B Vs C) do not differ in their decision making ability. The mean value (157.42) show that Aided school students possess more favorable decision making ability than Government and Unaided higher secondary school students.

Table : 4.16 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on type of Management in the dimension Establishing the positive decision making environment .

Type of management	N	Pair	P(sheffe)	Remark
Government(A)	148	A Vs B	0.004	Sig at 0.01 level
Aided(B)	269	B Vs C	0.262	NS
Unaided(C)	83	A Vs C	0.596	NS

For the dimension Establishing the positive decision making environment, The result showed that the two pairs Aided and Unaided (B Vs C) and Government and Unaided(A Vs C) higher secondary school students do not differ in their decision making ability. The other Pair Government and Aided (A Vs B) higher secondary school students have significantly difference in their decision making ability. The mean value (27.80) show that Aided school students possess more favorable decision making ability than Government and Unaided higher secondary school students

Table : 4.17 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on type of Management in the dimension Evaluating.

Type of Management	N	Pair	P(sheffe)	Remark
Government(A)	148	A Vs B	0.000	Sig at 0.01 level
Aided(B)	269	B Vs C	0.622	NS
Unaided(C)	83	A Vs C	0.011	Sig at 0.05 level

For the dimension evaluating, the result showed that the two pairs Government and Aided (A Vs B) and Government and Unaided(A Vs C) have significant difference in their decision making ability. The other Pair Aided and Unaided (B Vs C) do not differ in their decision making ability. The mean value (31.61) show that Aided school students possess more favorable decision making ability than Government and Unaided higher secondary school students.

Table : 4.18 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on type of Management in the dimension Generating potential solution.

Type of Management	N	Pair	P(sheffe)	Remark
Government(A)	148	A Vs B	0.013	Sig at 0.05 level
Aided(B)	269	B Vs C	0.610	NS
Unaided(C)	83	A Vs C	0.08	Sig at 0.01 level

For the dimension Generating potential solution, the result showed that the two pairs Government and Aided (A Vs B) and Government and Unaided(A Vs C) have significant difference in their decision making ability. The other Pair Aided and Unaided (B Vs C) do not differ in their decision making ability. The mean value (28.33) show that Aided school students possess more favorable decision making ability than Government and Unaided higher secondary school students.

Qualification of father wise comparison of mean scores of Decision making ability and its dimensions of higher secondary school students.

Null Hypothesis : 7

There is no significant difference in the total as well as dimensions wise mean scores of Decision making ability of higher secondary school students whose father having different educational qualification.

Table : 4.19 Qualification of father wise mean, standard deviation, sum of squares, degrees of freedom ,sum of squares and F-values of Decision making ability and its dimensions.

Dimensions	Qulfn of father	Mean	S.D	source	Sum of squares	df	Mean squares	F	P	Remark
Decision making ability	Below S.S.L.C	153.72	16.6	Bet Gp	1507.77	2	753.89	2.716	0.07	NS
	Above S.S.L.C	156.39	17.21	Within Gp	137959.4	497	277.58			
	Graduate	158.16	15.74	Total	139467.2	499				
Establishing the positive decision making environment	Below S.S.L.C	26.94	4.16	Bet Gp	60.54	2	30.27	1.786	0.17	NS
	Above S.S.L.C	27.43	4.16	Within Gp	8423.69	497	16.95			
	Graduate	27.86	3.88	Total	8484.23	499				
Deciding	Below S.S.L.C	33.57	5.05	Bet Gp	106.27224	2	53.14	2.233	0.11	NS
	Above S.S.L.C	34.39	4.62	Within Gp	11825.728	497	23.79			
	Graduate	34.65	4.81	Total	11932	499				
Evaluating	Below S.S.L.C	30.71	5.03	Bet Gp	2.67	2	1.33	0.058	0.94	NS
	Above S.S.L.C	30.88	4.5	Within Gp	11358.8	497	22.85			
	Graduate	30.78	4.47	Total	11361.5	499				
Generating potential solution	Below S.S.L.C	26.85	4.85	Bet Gp	243.20923	2	121.60	5.073	0.01	Sig at 0.01 level
	Above S.S.L.C	27.55	5.14	Within Gp	11913.063	497	23.97			
	Graduate	28.80	4.57	Total	12156.272	499				
Communicating and implementing	Below S.S.L.C	35.64	6.14	Bet Gp	27.82	2	13.91	0.386	0.68	NS
	Above S.S.L.C	36.14	5.69	Within Gp	17901.7	497	36.02			
	Graduate	36.06	6.12	Total	17929.5	499				

From the table it is clear that the calculated F value (F=2.716, p>0.05) is not significant at any level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of higher secondary school students whose father having different educational qualification ” is accepted. Hence the students of father’s whose having educational qualification below S.S.L.C, above S.S.L.C and graduate possess same level of decision making ability While comparing the means.

In dimension wise, the corresponding F values (F=1.786, 2.233, 0.058, 0.386, P>0.05) respectively are not significant at any level. Therefore the null hypothesis, “There is no significant difference in the dimension wise mean scores of Decision making ability of higher secondary school students whose father having different educational qualification ” is accepted. Hence the students of father’s whose having educational qualification below S.S.L.C, above S.S.L.C and graduate possess same level of decision making ability While comparing the means.

But for the dimension generating potential solution the F value(F=5.073, P<0.01)is significant at 0.01 level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of higher secondary school students whose father having different educational qualification” is rejected . That is Decision making ability of higher secondary school students statistically differ with their father’s educational qualification in the dimension Generating potential solution.

The result do not help to identify exactly the pairs of groups with the pairs of groups which differ statistically. Hence scheffe's multiple comparison is used for further analysis.

Table : 4.20 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on qualification of father in the dimension Generating potential solution.

Qualification of father	N	Pair	P(sheffe)	Remark
Below S.S.L.C(A)	148	A Vs B	0.369	NS
Above S.S.L.C(B)	269	B Vs C	0.178	NS
Graduate (C)	83	A Vs C	0.008	Sig at 0.01 level

For the dimension Generating potential solution, the result showed that the two pairs Below S.S.L.C andAbove S.S.L.C (A Vs B) and Above S.S.L.C and graduate (B Vs C) do not differ in the decision making ability of higher secondary school students based on the qualification of father. The other PairBelow S.S.L.C and graduate (A Vs C) differ in the decision making ability of higher secondary school students based on the qualification of father . The mean value (28.80) show that the Decision making ability of higher secondary school students whose father having Educational qualification as Graduate possess more favorable decision making ability than Below and Above S.S.L.C fathers'.

Qualification of mother wise comparison of mean scores of Decision making ability and its dimensions of higher secondary school students.

Null Hypothesis : 8

There is no significant difference in the total as well as dimension wise mean scores of Decision making ability of higher secondary school students whose mother having different educational qualification.

Table : 4.21 Qualification of mother wise mean, standard deviation, sum of squares, degrees of freedom ,sum of squares and F-values of Decision making ability and its dimensions.

Dimensions	Qulfn of mother	Mean	S.D	source	Sum of squares	df	Mean squares	F	P	Remark
Decision making ability	Below S.S.L.C	154.23	16.43	Bet Gp	744.69	2	372.34	1.334	0.264	NS
	Above S.S.L.C	155.60	17.35	Within Gp	138722.46	497	279.12			
	Graduate	157.56	16.23	Total	139467.2	499				
Establishing the positive decision making environment	Below S.S.L.C	27.25	3.93	Bet Gp	0.06	2	0.03	0.002	0.998	NS
	Above S.S.L.C	27.23	4.5	Within Gp	8484.18	497	17.07			
	Graduate	27.25	3.95	Total	8484.23	499				
Deciding	Below S.S.L.C	33.4	5.01	Bet Gp	179.1	2	89.56	3.787	0.023	Sig at 0.01 level
	Above S.S.L.C	34.64	4.53	Within Gp	11752.872	497	23.65			
	Graduate	34.48	5.05	Total	11.932	499				
Evaluating	Below S.S.L.C	30.74	4.99	Bet Gp	7.44	2	3.72	0.163	0.85	NS
	Above S.S.L.C	30.69	4.63	Within Gp	11354.02	497	22.85			
	Graduate	31.03	4.44	Total	11361.5	499				
Generating potential solution	Below S.S.L.C	27.11	4.88	Bet Gp	144.3	2	72.14	2.985	0.057	NS
	Above S.S.L.C	27.19	5.13	Within Gp	12011.991	497	24.17			
	Graduate	28.55	4.57	Total	12156.272	499				
Communicating and implementing	Below S.S.L.C	35.73	5.98	Bet Gp	16.65	2	8.33	0.231	0.794	NS
	Above S.S.L.C	35.86	6.04	Within Gp	17912.83	497	36.04			
	Graduate	36.24	6.01	Total	12929.5	499				

From the table it is clear that the calculated value (F=1.334 p>0.05) is not significant at any level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of higher secondary school students whose mother having different educational qualification ” is accepted. Hence the students of mothers whose having educational qualification below S.S.L.C, above S.S.L.C and graduate possess same level of decision making ability While comparing the means.

In dimension wise, the corresponding F values are value (F=0.002, 0.163, 2.985, 0.231, P>0.05) respectively are not significant at any level. Therefore the null hypothesis, “There is no significant difference in the dimension wise mean scores of Decision making ability of higher secondary school students whose mother having different Educational Qualification ” is accepted. Hence the students of fathers whose having educational qualification below S.S.L.C, above S.S.L.C and graduate possess same level of decision making ability While comparing the means

But for the other dimension deciding the calculated F value (F=3.787, p<0.01) is significant at 0.05 level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of higher secondary school students whose mother having different educational qualification” is rejected . That is Decision making ability of higher secondary school students statistically differ with their father’s educational qualification

The result does not help to identify exactly the pairs of groups with the pairs of groups which differ statistically. Hence scheffe's multiple comparison is used for further analysis.

Table : 4.22 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on qualification of mother in the dimension Deciding.

Qualification of mother	N	Pair	P(sheffe)	Remark
Below S.S.L.C(A)	247	A Vs B	0.040	Sig at 0.05 level
Above S.S.L.C(B)	166	B Vs C	0.970	NS
Graduate (C)	87	A Vs C	0.206	NS

For the dimension Deciding, the result showed that the two pairs Above S.S.L.C and Graduate (B Vs C) and Below S.S.L.C and graduate (A Vs C) do not differ in the decision making ability of higher secondary school students based on the qualification of mother. The other Pair Below S.S.L.C and Above S.S.L.C (A Vs B) differ in the decision making ability of higher secondary school students based on the qualification of mother. The mean value (34.64) show that the Decision making ability of higher secondary school students whose mother having Educational qualification as Above S.S.L.C possess more favorable decision making ability than Below S.S.L.C and Graduate mothers'.

Order of birth wise comparison of mean scores of Decision making ability and its dimensions of higher secondary school students.

Null Hypothesis : 9

There is no significant difference in the total as well as dimension wise mean scores of Decision making ability of higher secondary school students having different level of order of birth.

Table : 4.23 Order of birth wise mean, standard deviation, sum of squares, degrees of freedom ,sum of squares and F-values of Decision making ability and its dimensions.

Dimensions	Order of Birth	Mean	S.D	source	Sum of squares	df	Mean squares	F	P	Remark
Decision making ability	First	156.93	16.35	Bet Gp	1234.48	2	617.24	2.219	0.11	NS
	Second	154.06	16.6	Within Gp	138232.64	497	278.13			
	Third and above	153.22	17.85	Total	139467.2	499				
Establishing the positive decision making environment	First	27.56	4.1	Bet Gp	47.97	2	23.99	1.413	0.244	NS
	Second	27.05	4.17	Within Gp	8436.26	497	16.97			
	Third and above	26.76	4.07	Total	8484.23	499				
Deciding	First	34.32	4.84	Bet Gp	63.5	2	31.7565	1.330	0.265	NS
	Second	33.88	5.12	Within Gp	11868.487	497	23.8802			
	Third and above	33.30	4.37	Total	11932	499				
Evaluating	First	31.11	4.74	Bet Gp	49.87	2	24.93	1.096	0.335	NS
	Second	30.31	4.44	Within Gp	11311.59	497	22.76			
	Third and above	30.42	5.65	Total	11361.5	499				
Generating potential solution	First	27.73	4.98	Bet Gp	51.5	2	25.7284	1.056	0.348	NS
	Second	27.1	4.85	Within Gp	12104.815	497	24.3557			
	Third and above	27.05	5.01	Total	12156.272	499				
Communicating and implementing	First	36.2	5.98	Bet Gp	51.73	2	25.87	0.719	0.488	NS
	Second	35.52	5.94	Within Gp	17877.75	497	35.97			
	Third and above	35.69	6.21	Total	17929.5	499				

From the table it is clear that the calculated F value (F=2.219 P>0.05) is not significant at any level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of higher secondary school students having different level of order of birth ” is accepted. Thus from the mean scores it is confirmed that order of birth first, second and third and above students possess more or same level of decision making ability.

In dimension wise, the corresponding F values (F=1.413, 1.330, 1.096, 1.056, 0.719, P>0.05) respectively are not significant at any level. Therefore the null hypothesis. “ There is no significant difference in the dimension wise mean scores of decision making ability of higher secondary school students based on their order of birth” is accepted. Thus from the mean scores it is confirmed that order of birth first, second and Third and above higher secondary school students possess more or same level of decision making.

Type of family wise comparison of mean scores of decision making ability and its dimensions of higher secondary school students

Null hypothesis - 10

There is no significant difference in the total as well as dimension wise mean scores of Decision Making Ability of Nuclear & Joint Family of Higher Secondary school students.

Table : 4.24 Type of family wise mean, standard deviation, number and t-values of decision making ability and its dimensions.

Dimensions	Type of family	Mean	S.D	N	t	P	Remark
Decision making ability	Nuclear	154.81	16.9	386	1.161	0.25	NS
	Joint	156.82	16.05	114			
Establishing the positive decision making environment	Nuclear	27.05	4.12	386	1.946	0.052	NS
	Joint	27.9	4.09	114			
Deciding	Nuclear	33.83	4.88	386	1.416	0.16	NS
	Joint	34.57	4.91	114			
Evaluating	Nuclear	30.89	4.77	386	0.980	0.327	NS
	Joint	30.39	4.79	114			
Generating potential solution	Nuclear	27.25	4.89	386	1.078	0.28	NS
	Joint	27.83	5.09	114			
Communicating and implementing	Nuclear	35.78	6.09	386	0.551	0.582	NS
	Joint	36.12	5.69	114			

From the table it is clear that the calculated t value (t=1.161, p>0.05) is not significant at any level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of nuclear and joint family higher secondary school students ” is accepted . Thus from the mean scores it is confirmed that nuclear and joint family higher secondary school students possess more or same level of decision making ability.

In the dimension wise, the corresponding t values (t=1.946, 1.416, 0.980, 1.078, 0.551, P>0.05) respectively are not significant at any level. Therefore the null hypothesis, “There is no significant difference in the dimension wise means

scores of Decision making ability of nuclear and joint family higher secondary school students" is accepted. Thus from the mean scores it is confirmed that nuclear and joint family higher secondary school students possess more or same level of decision making ability.

Occupation of father wise comparison of mean scores of decision making ability and its dimensions of higher secondary school students

Null hypothesis-11

There is no significant difference in the total as well as dimension wise mean scores of Decision Making Ability of Higher Secondary school students whose father having different Occupation

Table : 4.25 Occupation of father wise mean, standard deviation, sum of squares, degrees of freedom, mean squares and F-values of decision making ability and its dimensions

Dimensions	Occupation of father	Mean	S.D	source	Sum of Squares	df	Mean squares	F	P	Re mark
Decision making ability	unemployed	153.28	16.16	Bet Gp	1735.3	2	867.63	3.131	0.045	Sig at 0.05 level
	Government	157.00	16.14	Within Gp	137731.9	497	277.13			
	Private	157.01	17.34	Total	139467.2	499				
Establishing the positive decision making environment	unemployed	27.16	4.13	Bet Gp	3.4	2	1.71	0.100	0.905	NS
	Government	27.27	4.32	Within Gp	8480.82	497	17.06			
	Private	27.33	4.08	Total	8484.23	499				
Deciding	unemployed	33.34	4.91	Bet Gp	193.5434	2	96.771	4.097	0.017	Sig at 0.05 level
	Government	34.50	4.34	Within Gp	11738.45	497	23.618			
	Private	34.61	4.95	Total	11932	499				
Evaluating	unemployed	30.62	4.84	Bet Gp	30.3	2	15.17	0.665	0.515	NS
	Government	30.40	4.36	Within Gp	11331.1	497	22.80			
	Private	31.06	4.82	Total	11361.5	499				
Generating potential solution	unemployed	26.87	4.94	Bet Gp	154.7464	2	77.373	3.204	0.041	Sig at 0.05 level
	Government	28.53	4.74	Within Gp	12001.52	497	24.147			
	Private	27.62	4.94	Total	12156.27	499				
Communi cating and implementing	unemployed	35.29	5.82	Bet Gp	146.3	2	73.13	2.044	0.131	NS
	Government	36.29	6.1	Within Gp	17783.2	497	35.78			
	Private	36.39	6.13	Total	17929.5	499				

The calculated value ($F=3.131$, $p<0.05$) is significant at 0.05 level. Therefore the null hypothesis, “There is no significant difference in the mean scores of Decision making ability of higher secondary school students whose father having different occupation” is rejected . That is Decision making ability of higher secondary school students statistically differ with their father’s occupation.

The result does not help to identify exactly the pairs of groups with the pairs of groups which differ statistically. Hence scheffe’s multiple comparison is used for further analysis.

Table:4.26 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on occupation of father.

Occupation of father	N	Pair	P(sheffe)	Remark
Unemployed(A)	234	A Vs B	0.295	NS
Govt(B)	62	B Vs C	1.000	NS
Private(C)	204	A Vs C	0.049	Sig at 0.05 level

The result showed that the two pairs Unemployed government(A Vs B) and Government and Private(B Vs C) do not differ in the decision making ability of higher secondary school students based on the Occupation of father . The other Pair Unemployed and private differ in the decision making ability of higher secondary school students based on the Occupation of father . The mean value (157.01) show that the Decision making ability of higher secondary school students whose father having Private job possess more favorable than Unemployed and Government fathers'.

In dimension wise, the corresponding F values (F=0.100, 0.665, 2.044, p>0.05) respectively are not significant at any level. Therefore the null hypothesis, "There is no significant difference in the dimension wise mean scores of Decision making ability of higher secondary school students whose father having different occupation" is accepted . Hence the students of fathers who are government employee, unemployed and Private employee possess same level of decision making ability while comparing the means

But for the other dimensions, the F value (F=4.097, 3.204, p<0.05) is significant at 0.05 level. Therefore the null hypothesis, "There is no significant difference in the mean scores of Decision making ability of higher secondary school students whose father having different occupation" is rejected . That is Decision making ability of higher secondary school students statistically differ with their father's occupation.

The result do not help to identify exactly the pairs of groups with the pairs of groups which differ statistically. Hence scheffe's multiple comparison is used for further analysis.

Table : 4.27 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on occupation of father in the dimension deciding.

Occupation of father	N	Pair	P(sheffe)	Remark
Unemployed(A)	234	A Vs B	0.249	NS
Government (B)	62	B Vs C	0.988	NS
Private(C)	204	A Vs C	0.025	Sig at 0.05 level

For the dimension deciding, the result showed that the two pairs Unemployed and government (A Vs B) and Government and Private (B Vs C) do not differ in the decision making ability of higher secondary school students based on the Occupation of father. The other Pair Unemployed and private (A Vs C) differ in the decision making ability of higher secondary school students based on the Occupation of father . The mean value (34.61) show that the Decision making ability of higher secondary school students whose father having Private job possess more favorable than Unemployed and Government job fathers'.

Table : 4.28 Pair wise comparison of mean scores of scheffe's procedure for Decision making ability based on occupation of father in the dimension generating potential solution .

Occupation of father	N	Pair	P(sheffe)	Remark
Unemployed(A)	234	A Vs B	0.049	Sig at 0.05 level
Government (B)	62	B Vs C	0.443	NS
Private(C)	204	A Vs C	0.282	NS

For the dimension generating potential solution, the result showed that the two pairs Government and Private(B Vs C) and Unemployed and Private(A Vs C) do not differ in the decision making ability of higher secondary school students based on the Occupation of father . The other Pair Unemployed and government(A Vs B) differ in the decision making ability of higher secondary school students based on the Occupation of father. The mean value (28.53) show that the Decision making ability of higher secondary school students whose father having the Government jobs possess more favorable than Unemployed and Private job fathers' .

Occupation of mother wise comparison of mean scores of decision making ability and its dimensions of higher secondary school students Null hypothesis-11

There is no significant difference in the total as well as dimension wise mean scores of Decision Making Ability of Higher Secondary school students whose mother having different occupation

Table : 4.29 Occupation of mother wise mean, standard deviation, sum of squares, degrees of freedom, mean squares and F-values of decision making ability and its dimensions.

Dimensions	Occupation of father	Mean	S.D	source	Sum of Squares	df	Mean squares	F	P	Remark
Decision making ability	unemployed	154.72	16.98	Bet Gp	957.283	2	478.672	1.717	0.181	NS
	Government	155.15	15.08	Within Gp	138509.9	497	278.692			
	Private	159.00	15.53	Total	139467.2	499				
Establishing the positive decision making environment	unemployed	27.22	4.07	Bet Gp	18.8818	2	9.4409	0.554	0.575	NS
	Government	27.94	4.39	Within Gp	8465.35	497	17.0329			
	Private	27.03	4.39	Total	8484.23	499				
Deciding	unemployed	33.86	4.95	Bet Gp	43.044554	2	21.5222	0.900	0.407	NS
	Government	34.42	4.11	Within Gp	11888.955	497	23.9214			
	Private	34.70	4.89	Total	11932	499				
Evaluating	unemployed	30.70	4.79	Bet Gp	56.5416	2	28.2708	1.243	0.289	NS
	Government	30.18	4.62	Within Gp	11304.9	497	22.7463			
	Private	31.62	4.68	Total	11361.5	499				
Generating potential solution	unemployed	27.25	5.03	Bet Gp	95.02232	2	47.5111	1.958	0.142	NS
	Government	26.97	4.63	Within Gp	12061.25	497	24.2681			
	Private	28.55	4.32	Total	12156.272	499				
Communicating and implementing	unemployed	35.29	5.82	Bet Gp	146.3	2	73.13	2.044	0.131	NS
	Government	36.29	6.1	Within Gp	17783.2	497	35.78			
	Private	36.39	6.13	Total	17929.5	499				

The calculated value (F=1.717,P>0.05) is not significant at any level. Therefore the null hypotheses, " There is no significant difference in the mean scores of decision making ability of higher secondary school students whose mother having different occupation is accepted. Hence the students of mothers who are government employee, unemployed & private employee possess same level of decision making ability while comparing the means.

In dimension wise, the corresponding F values (F=0.554, 0.900, 1.243, 1.958, 2.044, P>0.05) respectively are not significant at any level. Therefore the null hypothesis, "There is no significant difference in the dimension wise mean scores of decision making ability of higher secondary school students whose mother having different occupation" is accepted. Hence the students of mothers who are government employee, unemployed & private employee possess more or same level of decision making ability while comparing the means .

Descriptive statistics for problem solving ability of higher secondary school students

Table:4.30 Descriptive statistic for Problem solving ability.

Mean	155.26
Standard Deviation	16.72
Count	500

From the table 4.18. It is clear that total number of sample for the present study was 500. The arithmetic mean score obtained for the total sample was 155.26 and standard deviation 16.72.

Percentage wise analysis distribution of different levels of problem solving ability.

Table : 4.31 percentage wise distribution of different levels of problem solving ability

Problem solving Ability	Count	percent
Low	56	11.20.
Medium	378	75.60
High	66	13.20
Total	500	100.0

From the table 4.19 it is clear acquisition of 11.20% of higher secondary school students. Possess low level of problem solving ability 75.60% of higher secondary school students possess medium level of problem solving ability and 13.30% of higher secondary school students possess high level of problem solving ability. This indicate that most of the secondary school students have medium level in acquisition of problem solving ability.

Comparing of mean scores of problem solving ability of higher secondary school students based on background variable

Gender wise comparison of mean scores of decision making ability of higher secondary school students

Null hypothesis : 13

There is no significant difference in the mean scores of problem solving ability of male and female higher secondary school students.

Table : 4.32. comparison of mean scores of problem solving ability of higher secondary school students based on gender.

Gender	Mean	S.D	N	t	P	Remark
Male	26.82	7.29	248	3.847	0.000	Sig at 0.01 level
Female	24.53	5.94	252			

The calculated value (t=3.847,P≤0.01) is not significant at 0.01 level. Therefore the null hypotheses, " There is no significant difference in the mean scores of problem solving ability of male & female higher secondary school students is rejected. It shows that mean scores of problem solving ability of higher secondary school students have significance difference with this gender. Thus from the mean scores it is clear that male and female higher secondary school students possess Different level of problem solving ability.

Locality of residence wise comparison of mean scores of higher secondary school students.

Null hypothesis : 14

There is no significant difference in the mean scores of problem solving ability higher secondary school students whose residence are in rural & urban area.

Table : 4.33 comparison of mean scores of problem solving ability of higher secondary school students based on their locality of residence.

Locality Of residence	Mean	S.D	N	t	p	Remark
Rural	25.20	6.62	367	2.513	0.012	Sig at 0.05 level
Urban	26.94	6.92	133			

The calculated value (t=2.513,P<0.01) is not significant at 0.01 level. Therefore the null hypotheses, " There is no significant difference in the mean scores of problem solving ability of rural & urban higher secondary school students is rejected. That is problem solving ability of higher secondary school students statistically differ with their locality of residence. Thus from the results while comparing the mean scores it is confirmed that rural & urban students possess different level of problem solving ability.

Locality of school wise comparison of mean scores of problem solving ability of higher secondary school students.

Null hypothesis :15

There is no significant difference in the mean scores of problem solving ability higher secondary school students whose residence are in rural and urban area.

Table : 4.34 Locality of school wise mean, students Deviation, Number and t values of problem solving ability of higher secondary school students.

Locality of School	Mean	S.D	N	t	P	Remark
Rural	25.09	6.65	214	1.66	0.096	NS
Urban	26.10	6.78	286			

The calculated value (t=1.666,P>0.05) is not significant at any level. Therefore the null hypotheses, " There is no significant difference in the mean scores of problem solving ability of rural & urban higher secondary school students is accepted. That is Problem solving ability of higher secondary school students do not statistically differ with their locality of school. Thus from the results while comparing the mean scores it is confirmed that rural & urban school higher secondary students possess same level of Problem solving ability.

Medium wise comparison of mean scores of problem solving ability of higher secondary school students.

Null hypothesis : 16

There is no significant difference in the mean scores of problem solving ability of Tamil & English medium, School higher secondary students.

Table : 4.35 Medium wise mean, students Deviation, Number and t values of problem solving ability of higher secondary school students.

Medium	mean	S.D	N	t	P	Remark
Tamil	26.35	7.27	220	1.980	0.048	Sig at 0.05 level
English	25.13	6.25	280			

The calculated t value ($t=1.980$, $p<0.05$) is not significant at any level. Therefore the null hypotheses, " There is no significant difference in the mean scores of problem solving ability of Tamil & English medium higher secondary school students is accepted. That is problem solving ability of higher secondary school students do not statistically differ with their locality of school. Thus from the results while comparing the mean scores it is confirmed that Tamil & English school medium higher secondary students possess same level of decision making ability.

Type of school wise comparison of mean scores of problem solving ability of higher secondary school students

Null hypothesis : 17

There is no significant difference in the mean scores of problem solving ability of Boys Girls, Coeducations Higher secondary school students.

Table : 4.36 Type of school wise, mean, standard, deviation, sum of squares, degrees of freedom . Mean square and F-value of problem solving ability of higher secondary school students

Type of school	Mean	SD	source	Sum of squares	df	Mean square	F	p	Re mark
Boys	28.94	6.29	Bet Gp	710.1	2	335.05	8.047	0.00	Sig at 0.01 level
Girls	26.9	4.41	Within Gp	21929.1	497	44.12			
Coeducation	25.17	6.82	Total	22689.2	499				

The calculated value ($F=8.047, P<0.01$) is significant at 0.01 level. Therefore the null hypotheses, " There is no significant difference in the mean scores of problem solving ability of Boys, Girls, Co-education higher secondary school students is rejected. That is problem solving ability of higher secondary school students statistically differ with their type of school.

The result does not help to identify exactly the pairs of groups which differ statistically. Hence Scheffe's multiple comparison is used for further analysis.

Table : 4.37 Pair wise comparison of mean scores of Schiff's procedure for problem solving ability base on type of school.

Type of School	N	Pair	P(Schiff)	Remark
Boys(A)	52	A Vs B	0.401	NS
Girls(B)	31	B Vs C	0.377	NS
Co-Ed(C)	417	A Vs C	0.001	Sig at 0.01 level

The result showed that the two pairs Boys & Girls (AVs B) and Girls & Boys (BVs C) higher secondary school students do not differ in their problem solving ability. The other pair boys and co-education (AVs C) higher secondary school students have significant difference in their problem solving ability. The mean value (28.94) show that boys school students possess move favorable problem solving ability than girls and coeducation students.

Type of management wise comparison of mean scores of problem solving ability of higher secondary school students

Null hypothesis : 18

There is no significant difference in the mean scores of problem solving ability of Government, Aided & Unaided higher secondary school students.

Table : 4.38 Type of management wise mean, standard deviation, Sum of squares, degree of freedom, Mean square and F values of problem solving ability of higher secondary school students.

Type of Management	Mean	SD	source	Sum of squares	df	Mean square	F	p	Re mark
Govt	26.06	5.83	Bet Gp	68.3	2	34.1702	0.752	0.472	NS
Aided	25.32	7.23	Within Gp	22570.88	497	45.46			
Unaided	26.07	6.58	Total	22639.22	499				

The calculated F value (F=0.752,P>0.05) is not significant at any level. Therefore the null hypotheses, " There is no significant difference in the mean scores of problem solving ability of Government, Aided & Unaided higher secondary school students is accepted. That is problem solving ability of higher secondary school students do not statistically differ with their type of management. Thus from the mean scores it is confirmed that Government, Aided & Unaided and possess same level of problem solving ability.

Qualification of father wise comparison of mean scores of problem solving ability of higher secondary school students.

Null hypothesis : 19

There is no significant difference in the mean scores of problem solving ability of higher secondary school students whose father having different Educational Qualifications.

Table : 4.39 Qualification of father wise mean, standard Deviation, Sum of squares, degrees of freedom, Mean squares and F-values of problem solving ability of higher secondary school students

Qualification of father	Mean	SD	source	Sum of squares	df	Mean square	F	P	Remark
Below SSLC	25.46	6.67	Bet Gp	44.4458	2	22.22	0.489	0.61	NS
Above SSLC	25.68	7.29	Within Gp	22594.776	497	45.46			
Graduate	26.31	5.84	Total	22639.222	499				

The calculated value (F=0.489,P>0.05) is not significant at any level. Therefore the null hypothesis. " There is no significant difference in the mean scores of problem solving ability of higher secondary school students whose father having different qualification is accepted. That is problem solving ability of higher secondary school students do not statistically differ with their father's educational qualification. Hence the students of father whose having educational qualification below SSLC, Above SSLC & graduate possess same level of problem solving ability while comparing the means.

Qualification of mother wise comparison of mean scores of problem solving ability of higher secondary school students.

Null hypothesis : 20

There is no significant difference in the mean scores of problem solving ability of higher secondary school students whose mother having different educational qualification.

Table : 4.40 Qualification of mother wise mean, standard deviation, sum of squares, and F-values of problem solving ability of higher secondary school students.

Qualification of mother	Mean	SD	source	Sum of squares	df	Mean square	F	p	Re mark
Below SSLC	25.3	6.46	Bet Gp	69.8	2	34.88	0.768	0.464	NS
Above SSLC	25.95	7.54	Within Gp	22569.453	497	45.1			
Graduate	26.17	5.83	Total	22639.222	499				

The calculated value (F=0.489, p>0.05) is not significant at any level. Therefore the null hypothesis. " There is no significant difference in the mean scores of problem solving ability of higher secondary school students whose father having different qualification is accepted. That is problem solving ability of higher secondary school students do not statistically differ with their father's educational qualification. Hence the students of father whose having educational qualification below SSLC, Above SSLC & graduate possess same level of problem solving ability while comparing the means.

Order of Birth wise comparison of mean scores of problem solving ability of higher secondary school students.

Null hypothesis : 21

There is no significant difference in the mean scores of problem solving ability of higher secondary school students having different level of order of birth.

Table : 4.41 Order of birth wise mean, standard deviation, Sum of squares, degree of freedom, Mean square and F - value of problem solving ability of higher secondary school students.

Order of birth	Mean	SD	source	Sum of squares	df	Mean square	F	p	Remark
First	25.63	6.78	Bet Gp	11.4	2	5.700179	0.125	0.882	NS
Second	25.82	6.77	Within Gp	22627.822	497	45.52882			
Third and above	25.38	6.58	Total	22639.222	499				

The calculated value ($F=0.125, p>0.05$) is not significant at any level. Therefore the null hypotheses, " There is no significant difference in the mean scores of problem solving ability of higher secondary school students having the different level of order of birth" is accepted. That is problem solving ability of higher secondary school students do not statistically differ with their type of management. Thus from the mean scores it is confirmed that Order of birth first, second and third and above higher secondary school students possess same level of problem solving ability.

Type of family wise comparison of mean scores of problem solving ability of higher secondary school students.

Null hypothesis : 22

There is no significant difference in the mean scores of problem solving ability of Nuclear and joint family higher secondary school students

Table : 4.42 Type of family wise mean, students Deviation, Number and t values of problem solving ability of higher secondary school students.

Type of family	Mean	S.D	N	t	P	Remark
Nuclear	25.50	6.79	386	1.051	0.29	NS
Joint	26.24	6.55	114			

The calculated value (t=1.051,p>0.05) is not significant at any level. Therefore the null hypotheses, " There is no significant difference in the mean scores of problem solving ability of Nuclear and joint family higher secondary school students is accepted. That is Problem solving ability of higher secondary school students do not statistically differ with their Type of family. Thus from the results while comparing the mean scores it is confirmed that nuclear and joint family higher secondary school students possess same level of Problem solving ability.

Occupation of father wise comparison of mean scores of problem solving ability of higher secondary school students.

Null hypothesis : 23

There is no significant difference in the mean scores of problem solving ability of higher secondary school students whose father having different Occupation.

Table : 4.43 Occupation of father wise mean, standard deviation, sum of squares, and F-values of problem solving ability of higher secondary school students.

Occupation of father	Mean	SD	source	Sum of squares	df	Mean square	F	p	Remark
Unemployed	25.68	7.13	Bet Gp	31.16194	2	15.5809	0.343	0.71	NS
Government	26.27	6.51	Within Gp	22608.06	497	45.4890			
Private	25.47	6.34	Total	22639.222	499				

The calculated value (F=0.343, p>0.05) is not significant at any level. Therefore the null hypothesis. " There is no significant difference in the mean scores of problem solving ability of higher secondary school students whose father having different Occupation" is accepted. That is problem solving ability of higher secondary school students do not statistically differ with their father's Occupation. Hence the students of fathers who are Government

employee, Unemployed and private employee possess same level of problem solving ability while comparing the means.

Occupation of mother wise comparison of mean scores of problem solving ability of higher secondary school students.

Null hypothesis : 24

There is no significant difference in the mean scores of problem solving ability of higher secondary school students whose mother having different Occupation.

Table : 4.44 Occupation of mother wise mean, standard deviation, sum of squares, and F-values of problem solving ability of higher secondary school students.

Occupation of mother	Mean	SD	source	Sum of squares	df	Mean square	F	p	Remark
Unemployed	25.39	6.78	Bet Gp	168.020	2	84.0104	1.858	0.157	NS
Government	26.67	6.4	Within Gp	22471.201	497	45.2136			
Private	26.98	6.5	Total	22639.222	499				

The calculated value (F=1.858,P>0.05) is not significant at any level. Therefore the null hypothesis. " There is no significant difference in the mean scores of problem solving ability of higher secondary school students whose mother having different Occupation" is accepted. That is problem solving ability of higher secondary school students do not statistically differ with their mother's Occupation. Hence the students of mothers who are Government

employee, Unemployed and private employee possess same level of problem solving ability while comparing the means.

The relationship between decision making ability and problem solving of higher secondary students

Pearson correlation between Decision making ability and problem solving ability of Higher Secondary students based on background characteristics.

Table : 4.45

Background Characteristics		Pearson correlation	P	Remark
Total		0.176	0.000	Sig at 0.01 level
Gender	Male	0.250	0.000	Sig at 0.01 level
	Female	0.116	0.066	NS
Locality of residence	Rural	0.123	0.018	Sig at 0.01 level
	Urban	0.267	0.002	Sig at 0.01 level
Locality of school	Rural	0.256	0.000	Sig at 0.01 level
	Urban	0.120	0.043	Sig at 0.01 level
Medium	Tamil	0.187	0.005	Sig at 0.01 level
	English	0.198	0.001	Sig at 0.01 level
Type of school	Boys	0.219	0.119	NS
	Girls	0.245	0.184	NS
	Coeducation	0.167	0.001	Sig at 0.01 level
Type of management	Government	0.289	0.000	Sig at 0.01 level
	Aided	0.139	0.023	Sig at 0.01 level
	Unaided	0.207	0.060	NS
Qualification of father	Below SSLC	0.155	0.012	Sig at 0.01 level
	Above SSLC	0.226	0.005	Sig at 0.01 level
	Graduate	0.110	0.328	NS
Qualification of mother	Below SSLC	0.153	0.016	Sig at 0.01 level
	Above SSLC	0.242	0.002	Sig at 0.01 level
	Graduate	0.062	0.568	NS
Order of birth	First	0.148	0.024	Sig at 0.01 level
	Second	0.207	0.004	Sig at 0.01 level
	Third and above	0.192	0.101	NS
Type of family	Nuclear	0.16	0.002	Sig at 0.01 level
	Joint	0.229	0.014	Sig at 0.01 level
Occupation of father	Unemployed	0.137	0.036	Sig at 0.01 level
	Government	0.056	0.666	NS
	Private	0.263	0.000	Sig at 0.01 level
Occupation of mother	Unemployed	0.177	0.000	Sig at 0.01 level
	Government	0.159	0.377	NS
	Private	0.135	0.304	NS

1. The correlation between Decision making ability and problem solving ability of total sample 0.176. Which is significant at 0.01 level and verbally negligible correlation. That is there exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of sample increases problem solving ability also increases.
2. From the table it is clear that r values(r=0.250, 0.267, 0.256, 0.289, 0.226, 0.242, 0.207, 0.229, 0.263) respectively for Female ,residence with urban , locality with rural , government, parents qualification above SSLC, second order of birth, joint family and private employed fathers' higher secondary school students are significant at 0.01 level and is verbally interpreted as low correlation.
3. From the table it is clear that r values(r=0.123, 0.120, 0.198, 0.167,0.139,0.155,0.153,0.148,0.16,0.137, 0.177,) respectively for male ,residence with rural, locality with urban , Tamil and English medium, coeducation school, aided school, parents qualification below SSLC, first order of birth, Nuclear family and unemployed parents' higher secondary school students are significant at 0.01 level and is verbally interpreted as negligible correlation.

Regression Analysis:

There is no significant regression between Decision making ability and Problem solving ability of higher secondary school students.

Table: 4.46 Influence of Decision making ability and problem solving ability of higher secondary school students

R	R2	Adjusted	Std.error
0.176	0.013	0.029	16.47224

The 'R' value of 0.176 indicates that there is a strong relationship between Decision making ability and Problem solving ability of higher secondary school students. The 'R2' value of 0.013 indicates that about 1.3% of Decision making ability can be explained by problem solving ability values in this.

Table : 4.47

source	Sum of squares	df	Mean square	F	p
Regression	4342.418	1	4342.418	16.004	0.000
Residual	135124.734	498	271.335		
Total	139467.152	499			

The 'p' value ($p<0.01$) shows that the regression model predicts Decision making ability is significant at 0.01 level. This model has significant influence on decision making ability.

Coefficients

Table: 4.48

Predictor	B	Std.error	t	p
(constant)	144.023	2.905	49.581	0.000
Problem solving ability	0.438	0.109	4.000	0.000

The ‘p’ value of Problem solving predictor Coefficient ($p<0.01$) shows that Problem solving coefficient predicts Decision making ability of higher secondary school students.

CHAPTER-V

FINDINGS, CONCLUSIONS AND SUGGESTIONS

- **Resume of the study**
- **Findings**
- **Conclusion**
- **Suggestions for improving decision making ability and problem**
- **Suggestion for further Research**

CHAPTER-V

RESUME OF THE STUDY

The study under investigation is entitled as “Decision making and problem solving abilities of higher secondary school students”.

A sample of 500 secondary school students were selected from different schools in Kanyakumari district. Here the investigator used normative survey method. The technique used for the collection of the sample was random sampling.

For collecting data the tools employed were general data sheet. Decision making inventory & problem solving inventory. Data were obtained from higher secondary school students. The data were subjected to statistical analysis such as Mean, standard Deviation, t-test, ANOVA andpearson’s product moment coefficient.

FINDING BASED ON DECISION MAKING ABILITY OF HIGHER SECONDARY SCHOOL STUDENTS

The secondary school students of Kanyakumari district possessed medium level of decision making ability.

1. Gender had no impact on decision making ability. The mean scores of decision making ability of male and female higher secondary

school students possess same level of decision making ability (t=1.171, p>0.05)

2. Locality of residence had no impact on decision making ability. The mean scores of the decision making ability of higher secondary school students whose residence are in rural and urban area possess same level of decision making ability. (t-2.259, p<0.05)
3. Locality of school had no impact on decision making ability. The mean scores of decision making ability of rural and urban higher secondary school students possess same level of decision making ability (t=1.302,p>0.05)
4. Medium had no impact on decision making ability. The mean scores of decision making ability of Tamil and English higher secondary school students possess same level of decision making ability. (t=3.206, p<0.01)
5. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of school (F=6.941,p<0.01). The boys school students possess more favorable decision making ability than girls & coeducation school students.
6. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of management (F=9.249, p<0.01). The aided higher secondary school students possess more favorable decision making ability than government and unaided higher secondary school students.

7. Qualification of father had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose father having a educational qualification below SSLC, above SSLC and graduate possess same level of decision making ability. ($F=2.716$, $p>0.05$).
8. Qualification of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose mother having a educational qualification below SSLC, above SSLC and graduate possess same level of decision making ability. ($F=1.334$, $p>0.05$)
9. Order of birth had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students who have the order of birth first , second, and third and above possess same level of decision making ability. ($F=2.219$, $p>0.5$)
10. Type of family had no impact on decision making ability. The mean scores of decision making ability of nuclear and joint family higher secondary school students possess same level of decision making ability. ($t=1.161$, $p>0.05$)
11. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their father's occupation ($F=3.131$, $p<0.05$). The students of father who have the private job possess favorable decision making ability than the unemployed and government job fathers.
12. Occupation of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary

school students whose mother having private, government job and unemployed possess same level of decision making ability (F=1.717, p>0.05)

FINDING BASED ON DECISION MAKING ABILITY IN THE DIMENSION (DECIDING) OF HIGHER SECONDARY SCHOOL STUDENTS

The secondary school students of Kanyakumari district possessed medium level of decision making ability in the dimension deciding

1. Gender had no impact on decision making ability. The mean scores of decision making ability of male and female higher secondary school students possess same level of decision making ability (t=0.457, p>0.05)
2. Locality of residence had no impact on decision making ability. The mean scores of the decision making ability of higher secondary school students whose residence are in rural and urban area possess same level of decision making ability. (t-1.725, p>0.05)
3. Locality of school had no impact on decision making ability. The mean scores of decision making ability of rural and urban higher secondary school students possess same level of decision making ability (t=1.729, p>0.05)
4. There was significant difference in the mean scores of decision making ability of higher secondary school students based on the medium (t=3.689, p<0.01). Thus the mean scores of showed decision

making ability of English medium higher secondary school students possess more favorable decision making ability than Tamil medium students.

5. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of school ($F=5.640$, $p<0.01$). The boys school students possess more favorable decision making ability than girls and co-education school students.
6. Type of management had no impact on decision making ability. The mean scores of decision making ability of government, aided and unaided higher secondary school students possess same level of decision making ability($F=1.602$, $p>0.05$)
7. Qualification of father had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose father having a educational qualification below SSLC, above SSLC and graduate possess same level of decision making ability. ($F=2.233$, $p>0.05$).
8. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their qualification of mother. The students of mother who have the qualification above SSLC, possess more decision making ability than the below SSLC and Graduate mothers.
9. Order of birth had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students who

have the order of birth first , second, and third and above possess same level of decision making ability (F=1.330, p>0.05)

10. Type of family had no impact on decision making ability. The mean scores of decision making ability of nuclear and joint family higher secondary school students possess same level of decision making ability. (t=1.416, p>0.05)
11. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their father's occupation(F=4.097, p<0.05). The students of father who have the private job possess more decision making ability than the unemployed and government job fathers.
12. Occupation of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose mother having private, government job and unemployed possess same level of decision making ability (F=0.900, p>0.05)

FINDING BASED ON DECISION MAKING ABILITY IN THE DIMENSION (ESTABLISHING THE POSITIVE DECISION MAKING ENVIRONMENT) OF HIGHER SECONDARY SCHOOL STUDENTS

The secondary school students of Kanyakumari district possessed medium level of decision making ability in the dimension establishing the positive decision making environment

1. Gender had no impact on decision making ability. The mean scores of decision making ability of male and female higher secondary school students possess same level of decision making ability (t=0.190, p>0.05)
2. Locality of residence had no impact on decision making ability. The mean scores of the decision making ability of higher secondary school students whose residence are in rural and urban area possess same level of decision making ability. (t-0.832, p>0.05)
3. Locality of school had no impact on decision making ability. The mean scores of decision making ability of rural and urban higher secondary school students possess same level of decision making ability (t=1.156, p>0.05)
4. Medium had no impact on decision making ability. The mean scores of decision making ability of Tamil and English medium higher secondary school students possess same level of decision making ability. (t=1.079, p>0.05)
5. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of school (F=3.796, p<0.05). The boys school students possess more decision making ability than girls and co-education school students.
6. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of management (F=5.904, p<=0.01). The aided higher secondary school students possess more decision making ability than government and unaided higher secondary school students.

7. Qualification of father had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose father having a educational qualification below SSLC, above SSLC and graduate possess same level of decision making ability.($F=1.786, p>0.05$).
8. Qualification of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose mother having a educational qualification below SSLC, above SSLC and graduate possess same level of decision making ability. ($F=0.02, p>0.05$)
9. Order of birth had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students who have the order of birth first , second, and third & above possess same level of decision making ability. ($F=1.413, p>0.055$)
10. Type of family had no impact on decision making ability. The mean scores of decision making ability of nuclear and joint family higher secondary school students possess same level of decision making ability. ($t=1.946, p>0.05$)
11. Occupation of father had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose father having private, government job and unemployed possess same level of decision making ability ($F=0.100, p>0.05$)
12. Occupation of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose mother having private, government job and unemployed possess same level of decision making ability ($F=0.554, p>0.05$)

FINDING BASED ON DECISION MAKING ABILITY IN THE DIMENSION EVALUATING OF HIGHER SECONDARY SCHOOL STUDENTS

The secondary school students of Kanyakumari district possessed medium level of decision making ability in the dimension establishing the positive decision making evaluating.

1. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their gender ($t=2.259$, $p<0.01$) Thus the mean score of decision making ability of female students possess of high level of decision making ability than boys students.
2. Locality of residence had no impact on decision making ability. The mean scores of the decision making ability of higher secondary school students whose residence are in rural and urban area possess same level of decision making ability. (t-0.851, $p>0.05$)
3. Locality of school had no impact on decision making ability. The mean scores of decision making ability of rural and urban higher secondary school students possess same level of decision making ability ($t=0.095$, $p>0.05$)

4. Medium had no impact on decision making ability. The mean scores of decision making ability of Tamil & English higher secondary school students possess same level of decision making ability. ($t=0.872$, $p>0.05$)
5. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of school ($F=3.021$, $p<0.05$). The co-education school students possess more favorable decision making ability than girls and boys school students.
6. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of management ($F=13.960$, $p<0.01$). The aided higher secondary school students possess more favorable decision making ability than government and unaided higher secondary school students.
7. Qualification of father had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose father having a educational qualification below SSLC, above SSLC and graduate possess same level of decision making ability. ($F=0.058$, $p>0.94$).
8. Qualification of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose mother having a educational qualification below SSLC, above SSLC and graduate possess same level of decision making ability. ($F=0.163$, $p>0.05$)
9. Order of birth had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students who have

the order of birth first , second, third and above possess same level of decision making ability. (F=1.096, p>0.335)

10. Type of family had no impact on decision making ability. The mean scores of decision making ability of nuclear and joint family higher secondary school students possess same level of decision making ability. (t=0.980, p>0.05)
11. Occupation of father had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose father having private, government job and unemployed possess same level of decision making ability (F=0.665, p>0.05)
12. Occupation of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose mother having private, government job and unemployed possess same level of decision making ability (F=1.243, p>0.05)

FINDING BASED ON DECISION MAKING ABILITY IN THE DIMENSION GENERATING POTENTIAL SOLUTION OF HIGHER SECONDARY SCHOOL STUDENTS

The secondary school students of Kanyakumari district possessed medium level of decision making ability in the dimension generating potential solution

1. Gender had no impact on decision making ability. The mean scores of Decision making ability of male and female higher secondary school students possess same level of decision making ability (t=0.884, p>0.05)

2. Locality of residence had no impact on decision making ability. The mean scores of the decision making ability of higher secondary school students whose residence are in rural and urban area possess same level of decision making ability. ($t=1.599$, $p>0.05$)
3. Locality of school had no impact on decision making ability. The mean scores of decision making ability of rural and urban higher secondary school students possess same level of decision making ability ($t=0.677$, $p>0.05$)
4. There was significant difference in the mean scores of decision making ability of higher secondary school students based on the medium ($t=3.021$, $p<0.01$). Thus the mean scores of showed decision making ability of English medium higher secondary school students possess more favorable decision making ability than Tamil medium students.
5. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of school ($F=3.021$, $p<0.05$). The boys school students possess more favorable decision making ability than girls and boys school students.
6. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of management ($F=6.217$, $p<0.01$). The unaided higher secondary school students possess more favorable decision making ability than government and aided higher secondary school students.
7. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their qualification of father ($F=5.073$, $p<0.01$) The student of father who have the qualification

graduate possess more favorable decision making ability than the below SSLC & Above SSLC.

8. Qualification of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose mother having a educational qualification below SSLC, above SSLC & and graduate possess same level of decision making ability. (F=2.985, p>0.05)
9. Order of birth had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students who have the order of birth first , second, and third and above possess same level of decision making ability. (F=1.056, p>0.05)
10. Type of family had no impact on decision making ability. The mean scores of decision making ability of nuclear and joint family higher secondary school students possess same level of decision making ability. (t=1.078, p>0.05)
11. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their father's occupation (F=3.204, p>0.041). The students of father who have the government job possess favorable decision making ability than the unemployed and private job fathers.
12. Occupation of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose mother having private, government job and unemployed possess same level of decision making ability (F=1.958, p>0.05)

FINDING BASED ON DECISION MAKING ABILITY IN THE DIMENSION COMMUNICATING & IMPLIMENTING HIGHER SECONDARY SCHOOL STUDENTS

The secondary school students of Kanyakumari district possessed medium level of decision making ability in the dimension Communicating implementing

1. Gender had no impact on decision making ability. The mean scores of decision making ability of male and female higher secondary school students possess same level of decision making ability ($t=0.261$, $p>0.05$)
2. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their Locality of residence ($t=2.711$, $p<0.01$) The mean scores showed the decision making ability of higher secondary school students whose residence are in urban area possess more decision making ability than urban students.
3. Locality of school had no impact on decision making ability. The mean scores of decision making ability of rural and urban higher secondary school students possess same level of decision making ability ($t=0.677$, $p>0.05$)
4. There was significant difference in the mean scores of decision making ability of higher secondary school students based on the medium ($t=3.021$, $p<0.01$). Thus the mean scores of showed decision making ability of English medium higher secondary school students possess more favorable decision making ability than Tamil medium students.

5. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of school ($F=4.170$, $p<0.05$). The boys school students possess more favorable decision making ability than girls and co-education school students.
6. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their type of management ($F=1.153$, $p>0.05$). The unaided higher secondary school students possess more favorable decision making ability than government and aided higher secondary school students.
7. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their qualification of father ($F=0.386$, $p>0.05$). The student of father who have the qualification graduate possess more favorable decision making ability than the below SSLC and above SSLC.
8. Qualification of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose mother having a educational qualification below SSLC, above SSLC and graduate possess same level of decision making ability. ($F=0.231$, $p>0.05$)
9. Order of birth had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students who have the order of birth 1st , 2nd, 3rd and above possess same level of decision making ability. ($F=0.719$, $p>0.05$)
10. Type of family had no impact on decision making ability. The mean scores of decision making ability of nuclear and joint family higher

secondary school students possess same level of decision making ability. ($F=0.582$, $p>0.05$)

11. There was significant difference in the mean scores of decision making ability of higher secondary school students based on their father's occupation ($F=2.044$,$p>0.05$). The students of father who have the government job possess more decision making ability than the unemployed and private job fathers.
12. Occupation of mother had no impact on decision making ability. The mean scores of decision making ability of higher secondary school students whose mother having private, government job & unemployed possess same level of decision making ability ($F=1.458$, $p>0.05$)

FINDING BASED ON PROBLEM SOLVING ABILITY OF HIGHER SECONDARY SCHOOL STUDENTS

The secondary school students of Kanyakumari district possessed medium level of problem solving ability.

1. There was significant different in the mean scores of problem solving ability based on the gender ($t=3.847$, $p<0.01$). The mean scores showed male students possessed more favorable problem solving ability than female students
2. There was significant different in the mean scores of problem solving ability based on their Locality of residence ($t=2.513$, $p<0.05$) The mean scores showed the problem solving ability of higher secondary school

students whose residence are in urban area possessed more favorable problem solving ability than rural students.

3. Locality of school had no impact on problem solving ability. The mean scores of problem solving ability of rural and urban higher secondary school students possess same level of problem solving ability ($t=1.666$, $p>0.05$)
4. There was significant different in the mean scores of problem solving ability of higher secondary school students ($F=8.047$, $p<0.01$) The mean scores showed that Tamil medium students more favorable problem solving ability than English medium school students.($t=1.980$, $p<0.05$)
5. There was significant different in the mean scores of problem solving ability based on their type of school ($F=8.047$, $p<0.01$). The mean scores showed that boys school higher secondary students more favorable problem solving ability than girls and co-education higher secondary school students.
6. There was significant difference in the mean scores of problem solving ability of higher secondary school students based on their type of management ($F=0.752$, $p>0.05$). The unaided higher secondary school students possess more favorable problem solving ability than government and aided higher secondary school students.
7. There was significant difference in the mean scores of problem solving ability of higher secondary school students based on their qualification of father ($F=0.489$, $p>0.05$) The student of father who have the qualification graduate possess more favorable problem solving ability than the below SSLC and Above SSLC.

8. Qualification of mother had no impact on problem solving ability. The mean scores of problem solving ability of higher secondary school students whose mother having a educational qualification below SSLC, above SSLC and graduate possess same level of problem solving ability. ($F=0.768$, $p>0.05$)
9. Order of birth had no impact on problem solving ability. The mean scores of problem solving ability of higher secondary school students who have the order of birth first , second and third and above possess same level of problem solving ability. ($F=0.125$, $p>0.05$)
10. Type of family had no impact on problem solving ability. The mean scores of problem solving ability of nuclear and joint family higher secondary school students possess same level of problem solving ability. ($t=1.051$, $p>0.05$)
11. There was significant difference in the mean scores of problem ability of higher secondary school students based on their father's occupation ($F=0.343$, $p>0.05$). The students of father who have the government job possess more problem solving ability than the unemployed and private job fathers.
12. Occupation of mother had no impact on problem solving ability. The mean scores of problem solving ability of higher secondary school students whose mother having private, government job and unemployed possess same level of problem solving ability ($F=1.858$, $p>0.05$)

FINDINGS BASED ON CORRELATION OF DECISION MAKING ABILITY AND PROBLEM SOLVING ABILITY AMONG HIGHER SECONDARY SCHOOL STUDENTS

1. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of sample increases problem solving ability also increases.
2. There exists positive low correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of male higher secondary school students is increases problem solving ability also increases.
3. There exists no correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of female higher secondary school students have no Relation with their problem solving ability .
4. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of rural area higher secondary students is increases problem solving ability also increases.
5. There exists positive low correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of urban area higher secondary students increases the problem solving ability also increases.

6. There exists positive low correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of rural school higher secondary students increases the problem solving ability also increases.
7. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of urban school higher secondary students is increases the problem solving ability also increases.
8. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of Tamil medium higher secondary students is increases the problem solving ability also increases.
9. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of English medium higher secondary students is increases the problem solving ability also increases.
10. There exists no correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of Boys school higher secondary students have no relation with their problem solving ability .
11. There exists no correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of Girls school higher secondary students have no relation with their problem solving ability.

12. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of Co-education school higher secondary students is increases the problem solving ability also increases.
13. There exists positive negligible correlation b between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of Government higher secondary school students is increases the problem solving ability also increases.
14. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of Aided higher secondary school students is increases the problem solving ability also increases.
15. There exists no correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of unaided higher secondary school students have no relation with their problem solving ability.
16. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of students whose fathers have the qualification below S.S.L.C is increases the problem solving ability also increases.
17. There exists positive low correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of students whose fathers have the qualification above S.S.L.C is increases the problem solving ability also increases.

18. There exists no correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of higher secondary students whose fathers have the qualification Graduate have no relation with their problem solving ability.
19. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of students whose mothers have the qualification below S.S.L.C is increases the problem solving ability also increases.
20. There exists positive low students whose mothers have the qualification above S.S.L.C is correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of increases the problem solving ability also increases.
21. There exists no correlation between Decision making ability and problem solving ability of higher secondary school students . That is as decision making ability of students whose mothers have the qualification Graduate have no relation with their problem solving ability .
22. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of higher secondary school students who have the first order of birth is increases the problem solving ability also increases.
23. There exists positive low correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of higher secondary school students who have the second order of birth is increases the problem solving ability also increases.

24. There exists positive low correlation between Decision making ability and problem solving ability of higher secondary school students That is as decision making ability of higher secondary school students who have the third and above order of birth have no relation with their problem solving ability.
25. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of nuclear family higher secondary school students increases then problem solving ability also increases.
26. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of joint family higher secondary school students increases then problem solving ability also increases.
27. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of higher secondary school students whose fathers are unemployed is increases then the problem solving ability also increases.
28. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of higher secondary school students whose fathers have the Government job have no relation with their problem solving ability.
29. There exists positive low correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of higher secondary school students whose fathers

have the private job is increases than the problem solving ability also increases.

30. There exists positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of higher secondary school students whose mothers are unemployed is increases the problem solving ability also increases.
31. There exists no correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of higher secondary school students whose mothers have the Government job have no relation with their problem solving ability
32. There exists no correlation between Decision making ability and problem solving ability of higher secondary school students. That is as decision making ability of higher secondary school students whose mothers have the Government job have no relation with their problem solving ability.

SUGGESTION FOR IMPROVING DECISION MAKING ABILITY OF HIGHER SECONDARY SCHOOL STUDENTS

From the present study it is clear that higher secondary school students have be moderate decision making ability To create a better decision making ability the students the following could be Implemented

1. Providing opportunities for making good decision to the students.
2. Proper guidance should be given to the students for taking the good decision in their life.
3. Encouraging the students to read books of great personality persons

4. Organizing the awareness programs for improving the decision making ability among students.
5. Bread mind to look the problem & seeing into the situations.
6. Increase student's own interest to solve the problem.

SUGGESTION FOR IMPROVING PROBLEM SOLVING ABILITY OF HIGHER SECONDARY SCHOOL STUDENTS

From the present study it is clear that higher secondary school students have moderate problem solving ability.

To create a better problem solving ability the students the following could be Implemented

1. Encouraging the students to solve problems by their own.
2. Special training should be given to develop reasoning ability among the students.
3. Teachers &parents should encourage the students to develop their problem solving ability.
4. Meditation & Yoga should be given to develop the logical thinking.
5. Providing many puzzles and riddles to improve the problem solving ability among students.

CONCLUSION

The present study was conducted to find out the decision making ability &problem solving ability of higher secondary school students. The findings revealed that higher secondary school students from difference schools of Kanyakumari district. The students possess the medium level of decision making ability and its dimensions and of problem solving ability. Along with the support of background variables such as Gender, Locality of school, Qualification of father, Qualification of mother, Order of birth, Type of family and occupation of mother had no influence on decision making ability and locality of residence, Medium, Type of school, Type of management, Occupation of father had influence on decision making ability.

The findings also revealed that Locality of school ,Type of Management , Qualification of father, Qualification of mother , order of birth type of family , Occupation of father, Occupation of mother had no influence on Problem solving ability and Gender, Locality of residence, Medium, Type of school had influence on Problem solving ability.

There is positive negligible correlation between Decision making ability and problem solving ability of higher secondary school students based on the background variables such as Total sample, rural area residence, urban area school. Tamil medium, coeducation school, Aided school, Qualification of father had below S.S.L.C, Qualification of mother had below S.S.L.C, order of birth is first, nuclear type of family, occupation of father has unemployed and Qualification of mother had unemployed.

The positive low correlation between the decision making ability and problem solving ability of higher secondary school students based on background variables such as male, urban area residence, rural area school, government school,, Qualification of father had above S.S.L.C, Qualification of mother had above S.S.L.C, order of birth is second, Joint family ,occupation of father has private job.

SUGGESTION FOR FURTHER RESEARCH

Based on the finding of present investigations, investigator suggests the following areas for research in the field.

1. The present study is confined only to the student of KanyaKumari district. Further studies can be extended to other district of Tamil Nadu and other state.
2. The study was conducted on Higher secondary students only. It can be extended to college students.
3. The investigator hopes that the investigation will provide interest for the future researchers in Problem solving ability in mathematics.
4. The present study is concerned on relationship between Problem solving ability and decision making ability. This can be conducted to other subject by adopting more statistical techniques.

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APPENDICES

APPENDIX-B

NVKSD COLLEGE OF EDUCATION, ATTOOR

KANYAKUMARI DISTRICT

DECISION MAKING ABILITY TEST

(Prepared by L.Salina Theres and Dr R.P.Deepa)

INSTRUCTION:

Your following statements are related to the Decision Making Ability. Kindly statements and respond by put a (√) mark. Please do not omit my statements.

Strongly Agree(S.A)

Agree(A)

Undecided(U)

Disagree(D.A)

Strongly Disaree(S.D)

ESTABLISHING THE POSITIVE DECISION MAKING ENVIRONMENT:

S.NO	STATEMENTS	S.A	A
1	I encourage others to contribute their ideas in decision making		

2	I involve right people in making my decision		
3	I always make a team based decision		
4	I often generate good alternatives before making decisions		
5	I change my decisions according to the situation		
6	I guide others to make decisions instead of helping them.		
7	I feel difficult to make correct decisions in correct time		
8	I am afraid of the consequences of my decisions		
9	I feel difficult in making decisions in a critical situation.		
10	I feel stressed to face consequences of my unsure decisions.		
11	When I make decisions I never rely upon my experience		
12	I never make decisions according to the situations		

DECIDIND:

S.NO	STATEMENTS	
1	I won't make decisions when I am emotionally disturbed	
2	I can make correct decisions in the critical situations	

3	I can make swift decisions	
4	When I make decision I will think of all the possibilities	
5	I stand strong in my decisions.	
6	I avoid making important decision until the pressure is on.	
7	I don’t discuss with others when I take decisions .	
8	I generally make important decisions at the last miniute	
9	I always make decisions that I feel right to me	
10	I make decisions based on my convictions	
11	I take no effort to decide decisions	
12	I can make decisions only with the help of others	

EVALUATE THE DECISION:

S.NO	STATEMENTS	
1	I will never evaluate my decision by comparing others decision.	

2	I take decisions without conforming	
3		
4	I never prioritize my choices before making decisions	
5	I never evaluate the decisions which is taken by me	
6	If I have doubts in my decisions I will reconsider it	
7	I evaluate the impact of my decisions	
8	If I experience negative consequences I would change my decisions	
9	I am more expertise in evaluating my decisions	
10	When I get confusion to evaluate my decisions I seek the help of others	
11	I often evaluate my decisions before put into action	
12	I always evaluate my decisions with my past experience	

GENERATING POTENTIAL SOLUTION:

S.NO	STATEMENTS	
1.	I make decisions in logical and systematic ways	

2	I never make wrong decisions	
3	I depend on my own experiences to find potential solution to a problem	
4	I take decision according to my convenience.	
5	Before making decisions I would check the cause and effort.	
6	I make decisions based on detailed analysis of factual information	
7	I never think before making decisions	
8	I often make emotional decisions	
9	I never gather information related to the problem before making decisions.	
10	I never try to determine the real cause before making decisions.	
11	I never put the decision into action	
12	When I make a decision I never trust my inner feeling and reaction	

COMMUNICATING AND IMPLEMENTING:

S.NO	STATEMENTS	
1	Before I communicate my decisions, I create a clear idea about it.	
2	When communicating my decisions I include my rational and justification	
3	I will check the decision before implementing	
4	I follow rules and orders while communicating the decisions.	
5	I will postpone the imblementation of the decision which is not upto the level.	
6	I will check the quality of the decision before implementing	
7	I never implement the right decisions at the critical situation	
8	I never reconsider my decisions which is implemented by me.	
9	I never implement the decisions for helping others	
10	When I implement the decisions I never consider the positive and negative sides of the decisions	
11	I always depend others to implement the decisions	
12	I never reconsider if I find my decisions confusing	

APPENDIX-C

NVKSD COLLEGE OF EDUCATION
ATTOOR

KANYAKUMARI DISTRICT

DECISION MAKING ABILITY TEST

(Prepared by L.Salina Theres and Dr R.P.Deepa)

INSTRUCTION:

Your following statements are related to the Decision Making Ability. Kindly statements and respond by put a (√) mark. Please do not omit my statements.

Strongly Agree(S.A)

Agree(A)

Undecided(U)

Disagree(D.A)

Strongly Disaree(S.D)

ESTABLISHING THE POSITIVE DECISION MAKING ENVIRONMENT:

S.NO	STATEMENTS	S.
1	I involve right people in making my decision	
2	I often generate good alternatives before making decisions	
3	I guide others to make decisions instead of helping them.	
4	I feel difficult to make correct decisions in correct time	
5	I am afraid of the consequences of my decisions	
6	When I make decisions I never rely upon my experience	
7	I never make decisions according to the situations	

DECIDING:

S.NO	STATEMENTS	
1	I can make correct decisions in the critical situations	
2	I can make swift decisions	
3	When I make decision I will think of all the possibilities	
4	I stand strong in my decisions.	
5	I avoid making important decision until the pressure is on.	
6	I don’t discuss with others when I take decisions .	
7	I generally make important decisions at the last miniute	
8	I always make decisions that I feel right to me	
9	I take no effort to decide decisions	
10	I can make decisions only with the help of others	

EVALUATE THE DECISION:

S.NO	STATEMENTS	

1	I will never evaluate my decision by comparing others decision.	
2	I take decisions without conforming	
3	I never prioritize my choices before making decisions	
4	I never evaluate the decisions which is taken by me	
5	If I have doubts in my decisions I will reconsider it	
6	I evaluate the impact of my decisions	
7	I am more expertise in evaluating my decisions	
8	When I get confusion to evaluate my decisions I seek the help of others	
9	I often evaluate my decisions before put into action	

GENERATING POTENTIAL SOLUTION:

S.NO	STATEMENTS	
1	I take decision according to my convenience.	
2	Before making decisions I would check the cause and effort.	
3	I make decisions based on detailed analysis of factual information	
4	I never think before making decisions	

5	I never gather information related to the problem before making decisions.	
6	I never try to determine the real cause before making decisions.	
7	I never put the decision into action	
8	When I make a decision I never trust my inner feeling and reaction	

COMMUNICATING AND IMPLEMENTING:

S.NO	STATEMENTS	
1	Before I communicate my decisions, I create a clear idea about it.	
2	When communicating my decisions I include my rational and justification	
3	I will check the decision before implementing	
4	I follow rules and orders while communicating the decisions.	
5	I will check the quality of the decision before implementing	
6	I never reconsider my decisions which is implemented by me.	

7	I never implement the decisions for helping others	
8	When I implement the decisions I never consider the positive and negative sides of the decisions	
9	I always depend others to implement the decisions	
10	I never reconsider if I find my decisions confusing	

APPENDIX-D

N.V.K.S.D. COLLEGE OF EDUCATION, ATTOOR

KANYAKUMARI DISTRICT

PROBLEM SOLVING ABILITY TEST

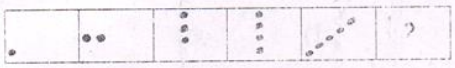
(Prepared by Deepa R.P. & Dr. M. Sadanandan)

Instructions: Dear Students

This test is designed for checking the ability in problem solving. The test consists of items related to number series, figural problems, missing parts and word problems. Read the following items carefully, identify the problem and select the correct solution. For each item four alternatives namely a,b,c,d are given write your response in the box given in the right.

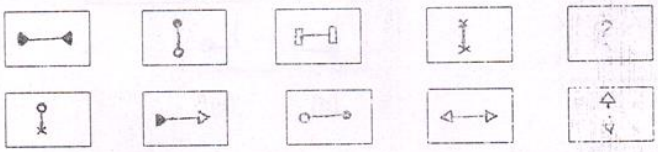
I. How the problem figures are given. Find the answer figure from among the given alternatives.

1. Find the missing part of the following



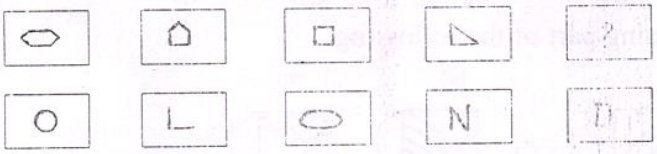
a) b) c) d)

2. Please find the figures continuing the series.



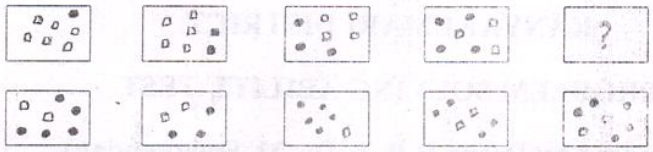
a) b) c) d) e)

3. Please find the figures continuing the series.



a) b) c) d) e)

4. Please find the figures continuing the series

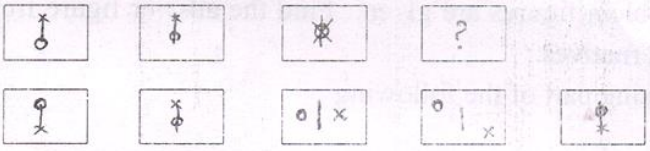


a) b) c) d) e)

5. Please find the figures continuing the series

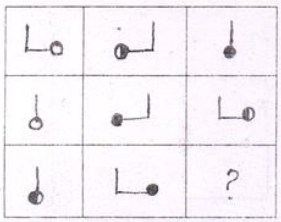
a) b) c) d) e)

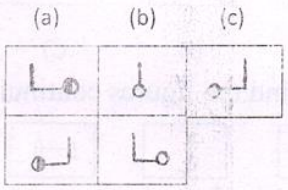
6. Please find the figures continuing the series



a) b) c) d) e)

7. Please find the figures continuing the series

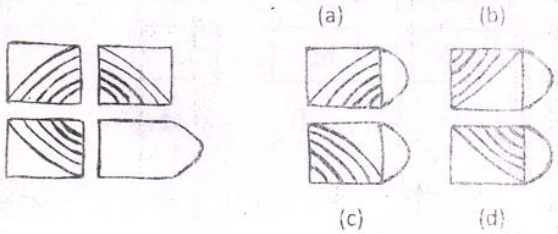




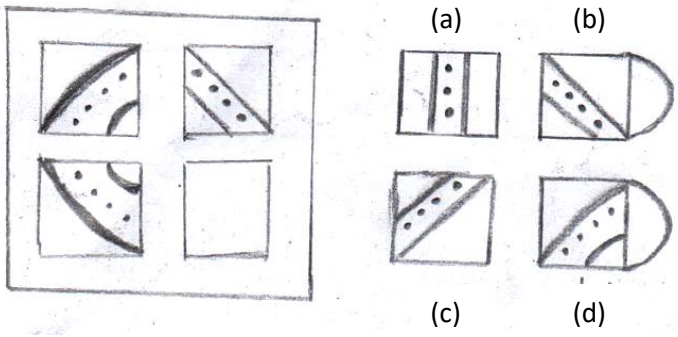
8. Please find the odd one?

a) b) c) d) e)

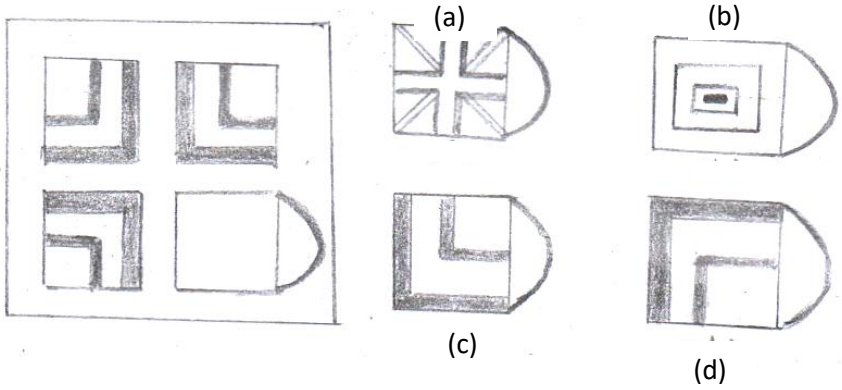
9. Find the missing part of the following



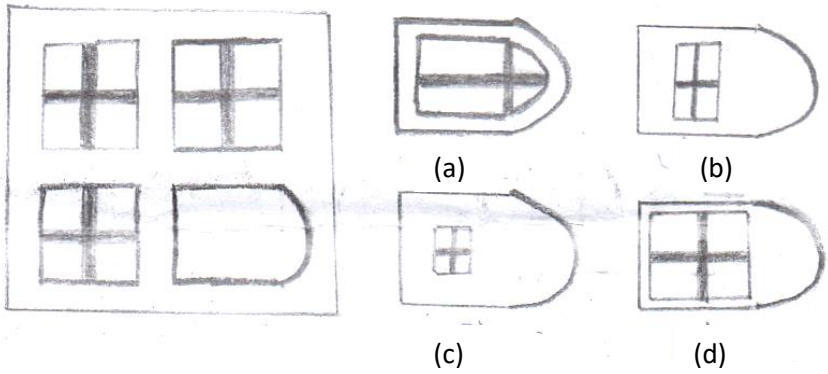
1. Find the missing part of the following



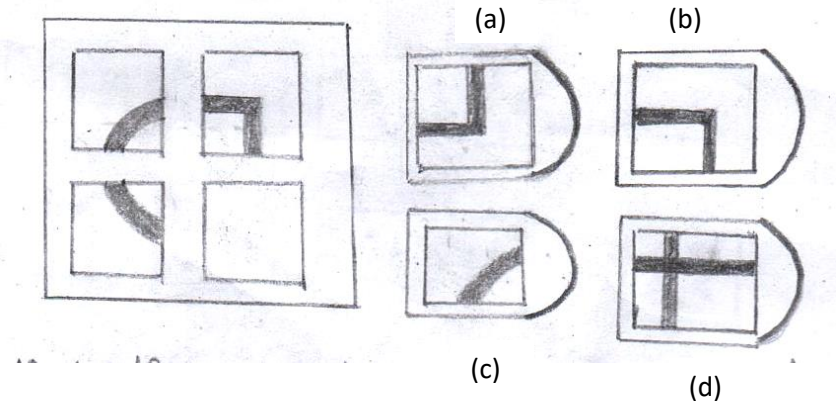
2. Find the missing part of the following



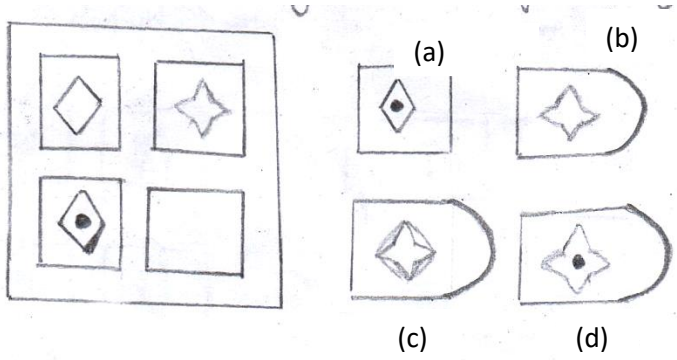
3. Find the missing part of the following



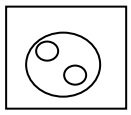
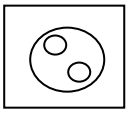
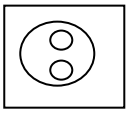
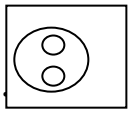
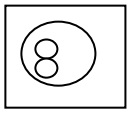
4. Find the missing part of the following



5. Find the missing part of the following



15. Please find the odd one

a)  b)  c)  d)  e) 

I. In the following items a series of numbers or letters are given. Find the missing character from among the given alternatives.

16. Find the missing term

0, 2, 8, 14, ___, 34

a) 24 b) 22 c) 20 d) 10

17. Find the wrong term in the number series

1, 3, 7 15, 27, 63, 127

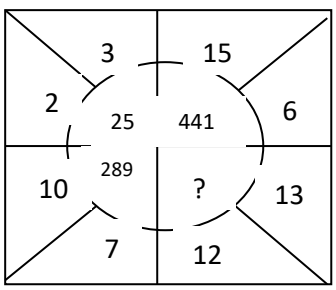
a) 7 b) 15 c) 27 d) 63

18. Find the next term of a letter series

WVTSQPNM

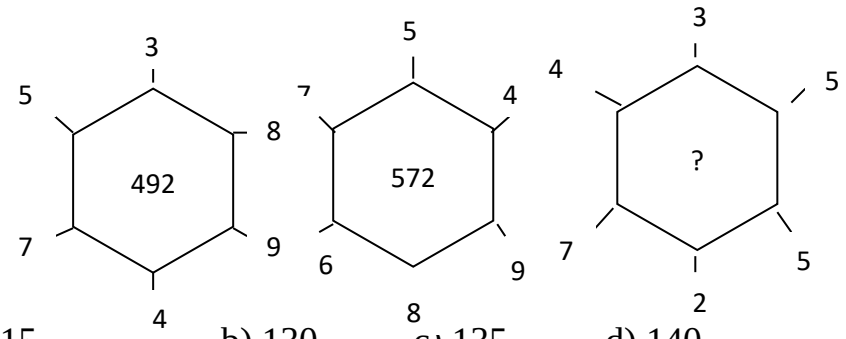
a) I J b) J I c) J K d) K J

19. Find the missing character from among the given alternatives.



a) 625 b) 25 c) 125 d) 156

20. Find the missing character form among the given alternatives



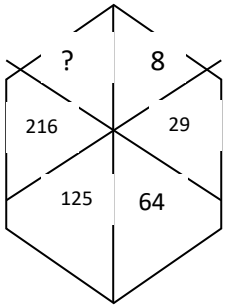
a) 115 b) 130 c) 135 d) 140

21. Find the missing character from among the given alternatives

?	1	2
21	22	40
1	2	5

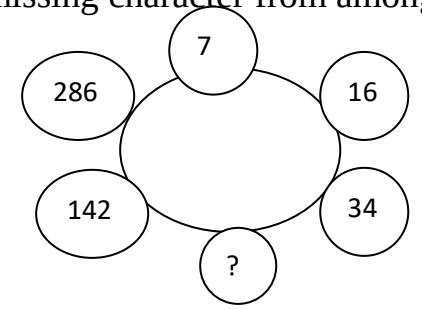
a) 5 b) 4 c) 3 d) 2

22. Find the missing character from among the given alternatives



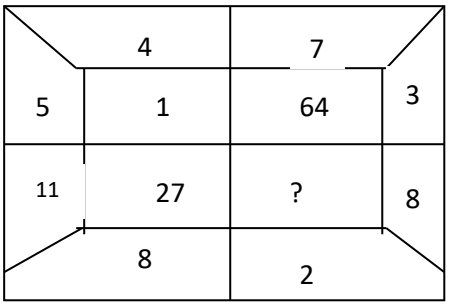
a) 4 b) 305 c) 343 d)729

23. Find the missing character from among the given alternatives



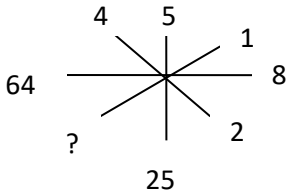
a) 72 b) 70 c) 68 d) 66

24. Find the missing character from among the given alternatives.



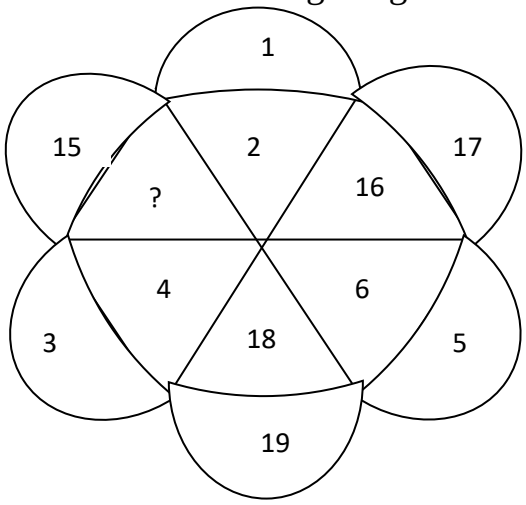
a) 0 b) 8 c) 125 d) 216

25. Find the missing character from among the given alternatives.



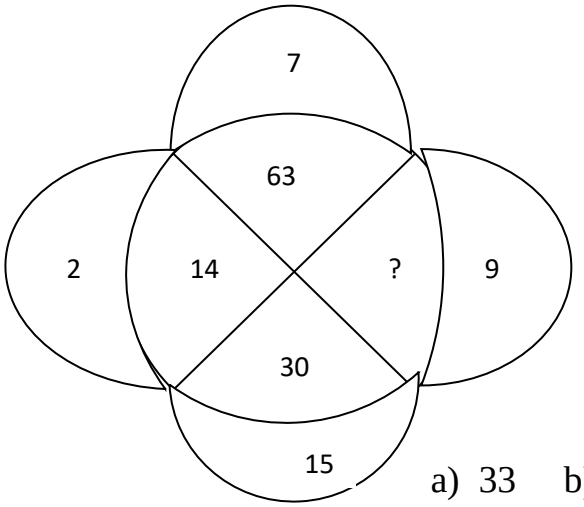
a) 1 b) 2 c) 3 d) 4

26. Find the missing character from among the given alternatives.



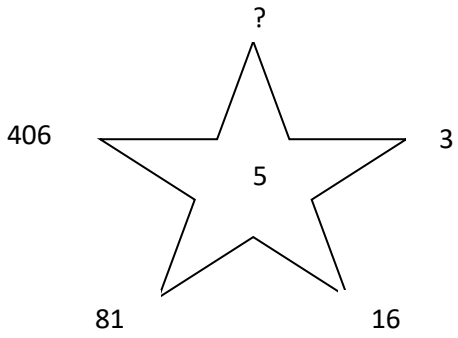
a) 13 b) 14 c) 20 d) 21

27. Find the missing character from among the given alternatives.



a) 33 b) 145 c) 135 d) 18

28. Find the missing character from among the given alternatives.



a) 1 b) 731 c) 625 d) 2031

29. If 53+31=2, 45+27=1, 69+32=3, What is 97+26=?

a) 1 b) 2 c) 3 d) 4

II. Certain problems and solutions are given below. Read the problems carefully and select the correct solutions from the given alternatives.

30. 30 years ago it would take a worker few hours to make a chair. Today it takes him just 30 minutes.

a) Man has become more industrious
b) People work faster in order to avoid unemployment
c) chairs have a shorter life cycle
d) workers have more spare time
e) productivity has increased.

31. Drinking and driving causes many accidents

a) People drink too much alcohol
b) People should not drive when drunk over the legal limit
c) There is a chance of 20 percent to cause an accident by driving in drunk condition
d) Alcohol dimenses driving skills
e) The police should carry out more breath analyzing tests

32. Today is Wednesday, what will be the fourth day from yesterday be?

a) Sunday b) Monday c) Friday
d) Thursday e) Saturday

33. Which lamp is the brightest?

a) Lamp A is less bright than lamp B

b) Lamp B is the brighter than Lamp C

c) Lamp C is a s bright as Lamp D

d) Lamp D is brighter than Lamp A

a) lamp A b) Lamp B c) Lamp C d) Lamp D e) No solution

34. A trader buys tea for Rs.1200/- and sells it for 1500 per sack of tea He makes a profit of Rs. 50/- How many of sacks of tea did he have?

a) 6 b) 7 c) 8 d) 4

35. 87 kg of potatoes are distributed in two boxes. One box weighs 11kg less than the other one. How many kilograms of potatoes does the lighter box contain?

a) 38 b) 23 c)42 d) 35

36. Aruna ranks twelth in a class of forty six. What will be her rank form the last

a) 33 b) 34 c) 35 d) 37

37. Starting from a point P, Sachin walked 20 metres towards south. He turned left and walked so meters. He then turned left and walked 20 meters. He again turned left and walked 40 meters and reached a point Q. How for and in which direction is the point Q from the point P?

a) 20m west b) 10m east c) 10mwest d)10 m north

38. A clock is so placed that at 12 noon its minute hand point at 1.30 P.M?

a)North b) south c) East d) West

39. What is the smallest number of ducks that could swim in this formation. Two ducks in front of duck, two ducks behind a duck and a duck between two ducks.

a) 3 b) 5 c) 7 d) 9

40. In a group of 15 people 7 read French, 8 read English while 3 of them read none of these two. How many of them read French and English both?

a) 0 b) 3 c) 4 d) 5

41. The mean of five consecutive number is 7. Which is the highest number?
    a) 8 b) 10 c) 7 9
42. If the price of silver is Rs. 3810 per 100 gms. What will be the approximate value of 15.7gm?
    a) 900 b) 65 c) 600 d) 750
43. One third of three forth of a number is 30 What is the number?
    a) 90 b)12 c) 150 d) 80
44. A train running at speed of 90 km /hr crosses a platform double its length in 36 second. Find the length of the platform.

45. In the following number series one number is wrong. find the number 11,13,19,26,35,46,59.
    a) 19 b)46 c) 13 d) 26
46. Sixteen men complete a work in twelve days. In how many days will 24 men complete the same work.
    a) 4 b) 8 c) 6 d) 3
47. The average age of 24 boys in 2 class is 11. why the teacher's age is included the average increases by one. What is the age of the teacher?
    a) 34 years b) 42 years c) 36 years d) 48 years
48. A boat goes 12km down steam and then comes back in 3 hours. If the speed of the current is 3 km/hr, the speed of boat in still water is
    a) 9km/hr b) 8km/hr c) 6km/hr d) 12 km/hr
49. If a man can swim down a steam at kmph and upsteam at 2 kmph, his speed in still water is
    a) 4 kmph b) 2 kmph c) 3 kmph d) 12km/hr
50. Walking 3/4 th of his usual rate, a man is 2½
    a) 7½hrs b) 3½hrs c) 3¼hrs d)7/8 hrs

51. Two pipes A and B would fill a tank in 30 to 36 minutes respectively. Both pipes being opened, find when the first pipe must be turned off so that the tank may be filled in 18 minutes?
    a) after 20 mts b) after 15 mts c) after 13 mts d) after 17 mts
52. An electric pump can fill a tank in 3 hrs. Because of a leak in the tank, it took 3½ hours to fill the tank. The leak can drain out all the water of the tank in
    a) 21 hrs b) 24 hrs c) 10½hrs d) 12 hrs
53. Two candles A and B of the same length were lighted at the same time, after 5 minutes the candle a was twice as long as the candle B. After 6 minutes the candle A was three times as long as candle B. How long would candle B take to burn completely?
    a) 7½ mts b) 10 mts c) 12 mts d) 15 mts
54. If the population of a town is 64,000 and it grows annually at a rate of 10% what is the increase in the population at the end of 3 years.
    a) 21184 b) 20814 c) 21888 d) 20614
55. The area of a rectangular field is 144 sq.m. If its length is increased by 5m, its area increases by 40 sq.m. The length of the field is
    a) 12m b) 14.4m c) 16m d) 18m
56. Six friends A,B,C,D,E & F are sitting in a closed circle facing the cnetre. E is left of D,C is between A & B, F is between E & A who is left of B?
    a) A b) C c)D d) E
57. Anu is taller than Anand but shorter than seema. Krishna is taller than Rohan but shorter than Anand. Dhiraj is taller than Krishna but shorter than seema who among them is the tallest?
    a) rohan b) Seema c) Krishna d) dhiraj
58. There are some horse and hens in a ground. The number of heads is 79. and the number of legs is 200. Find the number of horses
    a) 21 b) 35 c) 22 d) 42

APPENDIX-E

Details of the items selected and rejected are given below.

Section – A

Item	PL	PU	Phi	P	Selected Items
1	81	89	0.11	85	-
2	73	88	0.19	81	selected
3	56	73	0.18	65	-
4	55	92	0.42	74	selected
5	80	80	-	-	-
6	47	72	0.26	60	selected
7	28	34	0.7	31	selected
8	30	6849	0.19	40	selected
9	25	38	0.14	32	-
10	26	41	0.16	34	-
11	36	75	0.39	56	Selected
12	43	74	0.32	59	selected

Section – B

Item	PL	PU	Phi	P	Selected Items
1	67	79	0.14	73	-
2	59	78	0.21	69	selected
3	52	70	0.19	61	selected
4	75	93	0.25	84	selected
5	69	94	0.32	82	selected
6	41	43	0.2	42	selected
7	38	68	0.30	53	selected
8	32	73	0.41	53	selected
9	61	90	0.34	76	selected
10	60	75	0.16	68	-
11	41	82	0.42	62	selected
12	37	68	0.31	53	selected

Section – C

Item	PL	PU	Phi	P	Selected Items
1	18	33	0.17	26	-
2	28	87	0.60	58	selected
3	16	41	0.28	29	selected
4	26	67	0.41	47	selected
5	27	67	0.40	47	selected
6	66	94	0.35	80	selected
7	65	92	0.33	79	selected
8	61	75	0.15	68	-
9	63	92	0.35	78	selected
10	63	93	0.36	78	selected
11	67	92	0.31	80	selected
12	65	81	0.18	73	-

Section – D

Item	**PL**	**PU**	**Phi**	**P**	**Selected Items**
1	72	95	0.31	84	selected
2	57	74	0.18	66	-
3	72	85	0.16	79	-
4	72	83	0.13	78	-
5	61	97	0.44	79	selected
6	54	80	0.28	67	selected
7	40	78	0.39	59	selected
8	37	54	0.17	46	-
9	36	64	0,28	50	selected
10	37	75	0.38	56	selected
11	45	86	0.43	66	selected
12	44	78	0.35	61	selected

Section-E

Item	**PL**	**PU**	**Phi**	**P**	**Selected Items**
1	71	94	0.30	83	Selected
2	70	91	0.27	81	Selected
3	53	87	0.37	70	Selected
4	59	95	0.43	77	Selected
5	51	66	0.15	59	-
6	52	93	0.46	73	Selected
7	45	61	0.16	53	-
8	41	71	0.30	56	Selected
9	33	83	0.51	58	Selected
10	38	73	0.35	56	Selected
11	38	81	0.44	60	Selected
12	50	73	0.24	62	selected

(-) Item Rejected

Total Items – 60 Selected Items - 44

APPENDIX-F

SCORING KEY – PROBLEM SOLVING ABILITY TEST

1)	c	**2)**	d
3)	d	**4)**	a
5)	c	**6)**	e
7)	c	**8)**	c
9)	b	**10)**	c
11)	d	**12)**	d
13)	b	**14)**	d
15)	e	**16)**	a
17)	c	**18)**	d
19)	a	**20)**	b
21)	d	**22)**	c
23)	b	**24)**	d
25)	a	**26)**	b
27)	c	**28)**	d
29)	b	**30)**	e
31)	d	**32)**	e
33)	b	**34)**	a
35)	a	**36)**	c
37)	c	**38)**	c
39)	a	**40)**	b
41)	d	**42)**	c
43)	b	**44)**	d
45)	c	**46)**	c
47)	c	**48)**	a
49)	a	**50)**	a
51)	b	**52)**	a
53)	a	**54)**	a
55)	c	**56)**	c

57) b **58)** a

APPENDIX-D