



## REASONING ABILITY IN ADOLESCENTS

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### ABSTRACT :

The present study was carried out to observe the reasoning ability in adolescent girls & boys in the age group of 13-14 years. Reasoning is a form of thinking. It is a method by which we solve new problems or meet new situations & difficulties. Reasoning is a form of 'creative Thinking.' Through this thinking certain new things are found out. It is the result of the mental power with which man has been endowed with. Reasoning is thinking according to an organized process of formation. Reasoning is much like trial & error behaviour but instead of motor exploration, it is mental exploration. The study was carried out by using Reasoning ability test by L.N. Dubey. The Sample was of 100 students 50 boys & 50 girls, mean & SD are calculated & graphs are drawn.

**Key words :-** Thinking, creative thinking, trial & error behaviour mental exploration.

### INTRODUCTION :-

Basic reasoning skills are those processes basic to cognition of all forms. There are four categories of basic reasoning skills: storage skills, retrieval skills, matching skills, and execution skills.

- Storage and retrieval skills enable the thinker to transfer information to and from long-term memory. The learner does something on purpose to focus on the information being studied or to relate it to information that is already in long-term memory. An example of a commonly used storage and retrieval technique is *visual imagery mediation*. The learner purposely develops a visual (or auditory, kinesthetic, or emotional) representation for the information to be remembered.





- Matching skills enable a learner to determine how incoming information is similar to or different from information already stored in long-term memory. There are five types of matching skills:

1. **Categorization** enables learners to classify objects or ideas as belonging to a group and having the characteristics of that group. It speeds up the thinking process, making it possible to generalize and to go beyond the information immediately given by the isolated object or idea. When you look at an animal and call it a cat, you are categorizing. Any time you classify something as being an example of something you already know, you are categorizing.
2. **Extrapolation** enables learners to match the pattern of information from one area to that found in another area. This strategy assists the thinking process by making it unnecessary to start from scratch when learners encounter new information. Instead, the learner takes information that already exists for a different purpose and adapts it to a new situation.
3. **Analogical reasoning** involves seeing the similarities among essentially different objects or ideas and using existing knowledge about the first set of objects or ideas to understand the others. Analogical reasoning enables learners to combine the first two basic reasoning processes (categorization and extrapolation) in order to deal with new information and new relationships more effectively.
4. **Evaluation of logic** is the process of comparing the structure of information with an internalized system of logic to see if the information is valid or true. For example,





students can learn to follow the rules of mathematics and to look for and avoid specific types of errors.

5. **Evaluation of value** is the process of matching information to an internalized value system and analyzing the logic of that value system. For example, a learner might decide that a concept or a solution to a problem represents "the way things should be" and accept it as accurate. Or a person might realize that a certain piece of information (e.g., the exact names of the people in an anecdote) is not really worth remembering.
- Executive procedures are the final set of basic reasoning skills. These skills are *executive* in the sense that they coordinate a set of other skills in order help learners build new cognitive structures or drastically restructure old ones. There are three basic executive skills:
  1. **Elaboration** is the process of inferring information not explicitly stated in what the learner saw or heard. Learners use such skills as categorization, elaboration, analogical reasoning, and information retrieval to make these inferences.
  2. **Problem solving** is the process of finding information or a strategy to achieve a goal & to overcome an obstacle. In school, the goal is usually to find declarative or procedural information in a content area. For example, a student may want to know the capital of South Africa or how to calculate the actual cost of a house that he could buy for Rs. 80,000 with a 25-year loan at 9% interest.
  3. **Composing** is the process of creating new information to express an idea. It can be viewed as a specific type of





problem solving, in which the problem is to communicate ideas in an appropriate way to achieve a goal. Composing can consist of either written or oral communication of ideas. Although composition skills are often taught in English or language arts classes, they are employed in all areas of the curriculum. For example, environmental awareness studies students may use their composing skills to integrate their ideas regarding the various issues pertaining to environment like, water pollution, air pollution, soil pollution, etc.

Almost everything a school children or learner does can be viewed as directed toward solving a problem. Problem solving has been described in many ways, but it usually consists of describing the problem, determining the desired outcome, selecting possible solutions, choosing strategies, testing trial solutions, evaluating the outcomes of these trials, and revising steps as necessary. Problem solving is an important process, which appears to be dependent on various aspects, like intelligence, personality, reasoning ability, environment, culture, gender, age, etc. to name a few. Thus, it is apparent that part of the reasoning and problem solving ability is dependent in the inherent characteristics, many other aspects can be inculcated in the children so as to improve their skills and abilities to negotiate of solve problems with different type of nature.

Reasoning and learning are closely related, both being methods of solving problems, learning usually resulting from the process of reasoning. Reasoning involves thinking and has an element of imagination also. It has the element of perception and memory. Thinking and reasoning are not innate traits. Actually they grow out of experience. In the background of sensations and perceptions alone a person comes





to some conclusion or able to find solution to some problems. Reasoning needs a vast experience and for higher sort of reasoning, mastery of the language too is needed.

The thinking process in which we analyze cause and effect is generally known as reasoning process. When a person commits error in this analysis, his reasoning process is disturbed. Then it cannot be called a true reasoning process. The reasoning ability develops gradually. It does not appear suddenly. Children can solve problems even at their pre-School level.

There are wide variations among individuals in reasoning ability but any measure of reflective thinking in an unselected population will show that it is distributed continuously. We cannot say that only a small proportion of the population can reason, for such a statement would imply that a short division could be made between those who pass reasoning ability and those who do not. Since the distribution is a continuous one, differences in the ability to do reflective thinking are different in degree.

#### **AIM OF THE STUDY :-**

- To study the reasoning ability of adolescents.

#### **OBJECTIVE :-**

- To find out reasoning ability by 'Reasoning Ability' test (RA) by Dr.L.N. Dubey

#### **METHODOLOGY :**

Research methodology is a way to systematically solve the research problem. It may be understood as a science of studying how research is done scientifically.





For the purpose of study 100 ( 50 girls & 50 boys) students between 13 to 14 years age, were selected from two different (25 boys and 25 girls each ) schools in Nagpur City . For this particular study, students were observed randomly.

### **Reasoning Ability Test, by L.N. Dubey :**

Reasoning is a process of controlled thinking as association which starts with some problem of interest to the reasoned and is directed towards its solution. It differs from ordinary imagination in that the results of reasoning are suppose to check with some outside criteria, that is they are suppose to be correct while such checks are not necessarily required in imagination.

More and more exercises in problem solving will develop a child's reasoning ability. If a child starts taking interest in problem solving he will develop self- confidence and thus he may improve his reasoning ability. In the present study a random group design was followed. The data was collected following survey method from two schools in Nagpur city.

### **ANALYSIS OF DATA :**

Mean standard deviations are calculated and graph is drawn.

The two classified groups were –

- 1) Normal Boys (NB)
- 2) Normal Girls (NG)

The means and standard deviation values of RA of the two groups namely, NB; NG are displayed in Table -1 .



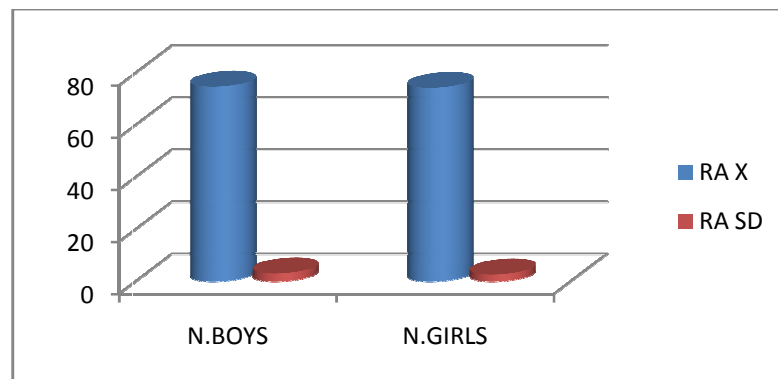


**Table -1**  
**Showing the Mean, S.D. Values of I.A. PSA and R.A. of Boys and Girls**

TESTS	VALUES	N.BOYS	N.GIRLS
RA	X	74.72	74.28
	SD	3.1	2.7

As far as the aspect of reasoning ability is concerned , the mean values observed for NB and NG are  $X = 74.74$ ;  $SD=3.1$  and  $X = 74.28$ ;  $SD=2.7$  respectively. The examination of the above values shows that both sexes are relatively similar in RA.

**Fig.-1**



### **DISCUSSION :**

A recent review and analysis of reasoning abilities in normal boys and girls reveals discrepancies both in results of tests and even where the results agrees in their interpretation.

In the present investigation it is clearly seen that reasoning abilities of the normal boys are found to be superior to the same of the girls. This minor inferiority of the girls may be attributed to their most natural shyness, family background, and to some extent to the reserve minded attitude of the girls. This reserve mindedness may further be attributed to the most common social restriction over the girls even in the coeducation pattern.





In the present studies the normal boys and girls are found to have high reasoning ability.

### **CONCLUSION:-**

The result of the study when subjected to different statistical measures, the result is found to be completely in congruence with the aim made. On the basis of finding the following conclusion is drawn.

A look at the values showed that reasoning ability of girls & boys is found to be same.

### **LIST OF BOOKS :**

#### **1) Understanding psychology,**

Robert S. Feldman, University of Massachusetts at Amherst Tata Mc GRAW- HILL Education private limited pp.232-233

**2) The developing child , Tenth Edition, Helen Bee, Denise Boyd, Pearson Education** PP.337, 349-350, 167, 200, 350, 349-351, 338, 224, 225, 340-341, 344-345, 346, 347, 348, 349, 462, 468

**3) Psychology concepts & Applications 2<sup>nd</sup> Edition, Jeffrey S. Nevid, Houghton Mifflin** Pg.No.386, 525, 560

