SUMMARY

A great variety of meanings and interpretations have been attached to the term intuition from being considered as merely an unreliable common sense source of knowledge, to an interpretation suggesting that intuition is the Primary source of all true knowledge (e.g. Descarte, Spinoza and Bergson).

Intuition has a long tradition of use in philosophy, mathematics, business, psychology, engineering, linguistics, music, literature, religion and science — Particularly with reference to the creative process. Some of the many definition and understandings of intuition are mutually inconsistent. Still the basic definition is simple. According to the Random House dictionary of the English language (second edition): intuition is "direct perception of truth, fact, etc. independent of any reasoning process, immediate apprehension." Another definition from the same dictionary refers to intuition as "a keen and quick insight" other definitions stress that the intuitive process is itself unconscious. Intuition, then is "knowing without knowing how you know".

Naturally, attempts have been made to reduce process to something less mysterious. Norman Simon, the Nobel laureate
economist and cognitive scientist, had suggested that intuition is nothing more than the brain’s capacity for subliminal computation.

Intuition is a knowledge that comes to a person without any conscious remembering or formal reasoning. Some people incorrectly call intuition the sixth sense critics of this idea suggest that intuition is rapid inference (reasoning from known facts) investigation usually shows that intuitions are based on experience, particularly, the experience of individuals with great sensitivity. A person’s experience is a store house of memories and impressions. These bits of experience with proper stimulation shape into a thought or judgement. Then the person knows something but cannot say where the knowledge came from. People call this kind of sudden impression an intuition or hunch.

Intuitions are sometimes followed in detective work, card games and military planning. They often occur in scientific work and in the treatment of diseases. Women are sometimes said to be more intuitive than men, but there is no scientific evidence for this claim.

SIGNIFICANCE OF STUDY

The empirical study of intuition is quiet recent in the field of education and psychology as intuition has been seen from
different perspectives e.g. Vaughan’s types of intuition (1979) and Goldberg’s intuition in terms of functions (1989).

To the present researcher however, the doubt arises in the mind whether intuition is a form of higher mental ability or is it a complete separate phenomena. Because if we consider intuition in terms of “insight” or functioning at the sub conscious level then it might mean that some background knowledge or some background thinking is at the base. Then in this case intuition should be related to higher mental ability. If we take intuition as something which defies cognitive processes and take it as a separate faculty e.g. (in case of mystic awareness or the knowledge of a Sufi). In order to solve this controvers the present research is a humble attempt to understand the phenomena of intuition as Einstein said “intuition is what is important.”

**Sample of the study**

The sample of the study has been selected from the two schools of Aligarh Muslim University. For the present purpose only XI standard students were selected for the study from different streams. Three hundred students (100 boys and 200 girls) have been selected from the following schools on random basis.
These are the only two schools one for girls and one for boys which cater the +2 education under Aligarh Muslim University.


Total students enrolled in science were 935 (317 Girls and 618 boys). In Social Science and Arts stream the test was administered only to girls of Abdullah School. The students enrolled in Social Science and Arts are 120 girls. The present test of higher mental ability is meant only for science students. Therefore, it could not be applied on social sciences and arts students. However, only for the sake of curiosity hundred girls were taken from social science and arts stream and were given the test of intuition and creative problem solving.

The sample break is as follows:

Stream wise break up of the sample:

<table>
<thead>
<tr>
<th>Stream</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>200 (100 boys and 100 girls)</td>
</tr>
<tr>
<td>Arts</td>
<td>50 (only girls)</td>
</tr>
<tr>
<td>Social Science</td>
<td>50 (only girls)</td>
</tr>
</tbody>
</table>

Sex-wise break up of the sample
<table>
<thead>
<tr>
<th>Sex</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>100</td>
</tr>
<tr>
<td>Girls</td>
<td>200</td>
</tr>
</tbody>
</table>

On the whole the sample is representative of the 10+2 school population of Aligarh Muslim University.

**TOOLS OF THE STUDY**

Following tools were used for the study.

**To Measure Intuition**

The test was constructed by Psychologist and the author of “The Intuitive Edge” Dr. Philip Goldberg. This book was one of the first books to be printed for the layman on intuition.

This test contains 32 items. Each right answer was assigned one mark and each wrong answer was assigned zero mark. The test is developed for measuring intuition among students.

**To Measure Creative Problem Solving**

The present investigator employed Passi-Usha Test of Creative Problem Solving (PUTCPS). This test battery is meant to identity creative talent among the students. The (PUTCPS) is developed for the purpose of measuring creative problem solving of school children and also adult. It measures development of thinking skills-creative, critical and integrative thinking. The abilities included are originality and elaboration.
To Measure Mental Abilities

For measuring mental abilities test of higher mental ability in science (THMAS) was used. It was constructed by Dr. S.N. Sansanwal and Dr. (Mrs.) Anuradha Joshi. The scale contains of 20 items each with alternative responses. For the present test four levels of cognitive domain have been taken viz application, analysis, synthesis and evaluation. It is applied only on science students.

Statistical Techniques Employed

In order to examine and justify the objectives of the study, the statistical techniques employed, are product moment correlation and factor analysis. Product moment correlation coefficient was calculated in order to find out the relationship between different variables of the study i.e. intuition, higher mental ability (Application, analysis, synthesis, evaluation) and creative problem solving (right, wrong and original).

In order to obtain the main objective of the study factor analysis was carried out through the technique of rotated varimax. This was done to find out the factors behind intuition and higher mental ability.
Method and Procedure

In the present study, students studying in class XI in Abdullah +2 and Allama Iqbal +2 of A.M.U. Aligarh were administered Dr. Philip Golberg’s test on intuition, Dr. S.N. Sanswal and Anuradha Joshi’s test of higher mental ability and Dr. Passi Usha test of creative problem solving. A sample consisting of three hundred students was selected for both the classes i.e. boys and girls randomly.

A special case was given on administration of the test intuition, higher mental ability and creative problem solving tests and its conditions and instructions laid down in the manuals strictly observed. The students were given sufficient time to make their mind to respond to the test given to them. After collecting the test paper’s from the students, the scoring was done strictly to the manuals. The data thus collected, was given necessary statistical treatment.

The statistical techniques were employed product moment correlation and factor analysis.

OBJECTIVES OF THE STUDY

The objectives of the present study are given below:-

1. To study the relationship between intuition and higher mental ability.
2. To study the relationship between intuition and creative problem solving.

3. To study the relationship between higher mental ability and creative problem solving.

4. To search the factors involved in intuition, higher mental ability and creative problem solving.

**HYPOTHESIS**

To every problem, there may be more than one solution. A researcher’s effort is also directed towards a solution of the selected academic problem. Most of the time it is possible to make intelligent guesses about the solution of the problem. Such an intelligent guess of a tentative solution is known as “hypothesis”. As for that matter, the investigator formulated the following hypotheses.

In order to study the objectives the following hypothesis were formulated in the form of null-hypothesis.

1. There is no relationship between intuition and higher mental ability.

2. There is no relationship between intuition and creative problem solving.

3. There is no relationship between higher mental ability and creative problem solving.
For the objectives from one to three we employed product moment correlation. In order to test the first, second and third hypothesis product moment correlation was found between the three variables.

In order to study the fourth objective we used rotated varimax technique of factor analysis.

FINDINGS OF THE STUDY

Findings Based on Inter Correlations

1. Intuition is not significantly related to higher mental ability and creative problem solving in total sample (N = 200), total boys, total girls. But in the case of PCB (boys and girls) it is significantly but negatively correlated with evaluation. In the case of PCM (boys and girls) intuition is negatively but significantly correlated with application- a dimension of higher mental ability. Intuition is significantly and positively correlated with wrong and original and is negatively correlated to right responses in the group of social sciences and arts students.

2. Application- a dimension of higher mental ability is positively and significantly correlated with analysis in the group of total science. Application is positively and significantly correlated with analysis in total boys total girls
and PCB (boys and girls). Application is also positively and significantly correlated with synthesis in total boys.

3. Analysis is positively and significantly correlated with synthesis in the group of total science (N=200), total boys, and PCM (boys and girls). Analysis is also significantly but negatively correlated with right responses in total science (N=200) and in the group of PCB (boys & girls). Analysis is also significantly and positively correlated with original responses in the group of PCB (boys and girls).

4. Synthesis is significantly but negatively correlated with wrong in creative problem solving task in the group of science, total boys and PCB (boys and girls). Synthesis is significantly and positively correlated with original responses in the group of PCB (boys and girls).

5. Evaluation has a positive and significant correlation with wrong in the group of girls and is negatively but significantly correlated with original responses also in the group of girls but is negatively correlated with wrong in the group of PCB (boys and girls). Evaluation is also positively and significantly correlated with right in the group of PCM (boys and girls).
6. Wrong responses – a dimension of creative problem solving task has a significant but negative correlation with right and original in the group of total science and total boys. Wrong responses are also negatively correlated with original in the group of total girls and PCB (boys and girls).

7. Right responses has a significant but negative correlation with original responses in all the groups.

8. Original responses has a significant but negative correlation with wrong and right responses of creative problem solving task in the group of science, total boys, girls, PCB (boys and girls). It is also negatively correlated with right in the group of social sciences and PCM (boys and girls).

**Findings Based on Factor Analysis**

Considering all the results five factors have emerged-

1. If we look closely at the results, we find that the IV factor Rational Vs A- rational is common in all the three groups.

2. Summarizing the results further we find high and low cognitive ability as the II factor which is also common in all the three groups.

3. In total sample of girls the first factor can be termed as insight.

4. The third factor in girls can be termed as ability to synthesise or organizing ability.
In total science group the first factor has been termed as divergent thinking (vs convergent thinking). The same factor has emerged in total boys group as factor III convergent thinking (vs divergent thinking).

**Delimitations/Suggestions for Further Studies**

Though the present investigation has been carried out with due care and thought regarding various aspects of a research work, it may continue to have some shortcomings which have been realized during the conduction of the research. Being conscious of the shortcomings some suggestions are being made here for further investigations in this area.

1. Vaughan (1979) separates the extensive range of human intuitive experiences into four discrete levels of awareness. Physical, emotional, mental and spiritual. The test used by Goldberg has items mostly covering mental and emotional aspects involved in intuition. Therefore, another test on intuition which includes other dimensions of intuition has to be developed.

2. The test of higher mental ability was meant only for science students in the present study. It could not be applied on social sciences and arts students. Therefore, a test of higher mental ability which can be given to both science
and social science group should be used in further researches.

3. None of the subjects except one, in the present sample scored “strongly intuitive” on the test of intuition. The test of intuition was scored in four categories i.e. strongly intuitive, more intuitive, erratic and low intuitive. Another study is needed to discover high scoring subjects on intuition. Only then we can reach at some definite conclusion.

**Educational Implications**

1. Intuition and “mental ability” under study are completely separate from each other. Pure intuition defies all logic whereas mental ability is based on reasoning. Intuition and creative problem solving ability have a meeting point in insight learning and problem solving. Here there is some background of logic, reasoning and experiences, but the solution is found all of a sudden and in a ‘moment’. In insight past experiences have a role to play as they are in the background and the subject captures the right responses all of a sudden based on the totality or wholeness of the situation. Intuition also comes in a particular moment and has the characteristics of suddenness. It may or may not be based on past experiences. In its purest form it
defies all logic in which the past experiences are embedded. When intuition has some background of past experiences we call it insight.

2. Application, analysis and synthesis are not separate dimensions of higher mental ability. This shows that a person who has application ability also has ability to analyse and synthesize. Evaluation however seems to be a separate factor of higher mental ability. Probably the capability for evaluation needs more training than it’s being an inherent capability.

3. The study also confirms Guilford’s idea about creativity which involves divergent thinking. Emphasis upon ‘right’ responses in teaching discourages originality of children.