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Understanding and Exploring Multiple Intelligences in the Classroom

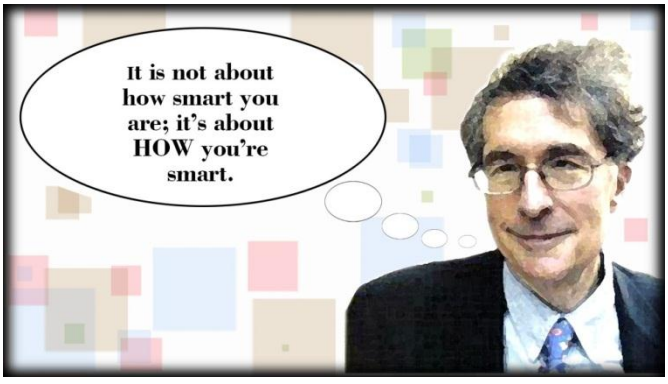
Priyanka Padhy

Among the many exciting developments in the field of Psychology that have had a marked implication upon education, the introduction of the theory of Multiple Intelligences by Howard Gardner in 1983 was of paramount importance. This conceptualization of intelligence presented in Gardner's book *Frames of Mind* was enthusiastically received by educators across the world. The MI theory provided a new, refreshing lens to look at the capacities of learners, one that was far more multi-dimensional and diverse than the traditional understanding.

This article will briefly delve into how this path-breaking theory came about, what the 8 intelligences mean and how educators can undertake MI inspired practices in their classrooms.

Multiple Intelligences: The Origins

The psychometric or IQ (Intelligence Quotient) view of 'intelligence' prevalent since the early 1900s, conceptualized it as a unitary trait or a general capacity that can be adequately measured by an IQ test, that is inherited from one's parents at birth and is unchanging in nature. These tests were heavily weighted towards abilities such as verbal, numerical and logical reasoning. Even today, this understanding of intelligence is strongly held by many and drives school curricula across the world. Students who are strong at language or math skills are considered *'good'* or *'smart'* while all other abilities are treated as less important.



While working in the areas of neuropsychology and child development, Gardner began to question this traditional and constrictive view of intelligence. In his work with stroke victims at the *Boston University Aphasia Research Centre* and with gifted children at *Harvard Project Zero*, Gardner witnessed that people have a wide range of capacities and each individual has a unique pattern of abilities. A person's strength in one area of performance is neither related to nor predicts their strengths in other areas. For instance, one person may be able to solve complex mathematical puzzles with ease, yet be unable to read a map while driving or learn a new song well or know how to ask for help on losing luggage at an airport. Strength in logical-mathematical tasks does not predict either success or failure at other tasks.

Viewing Intelligences as Multiple in nature

Based on his findings, Gardner reached a conclusion about intelligence and said,

"The human mind is better thought of as a series of relatively separate faculties, with only loose and non predictable relations with one another, than as a single all-purpose machine that performs steadily at a certain horsepower, independent of content and context."

The *Multiple Intelligences* perspective established that individuals possess several intelligences, not just one. Further, in contrast to intelligence implied by a number calculated by a test, intelligence is contextual and indicated by the products people create in the real world.

The Eight Intelligences

Based on neurological, psychometric and evolutionary evidence, Gardner arrived at 8 qualitatively different ways for an individual to be intelligent. Each of these 8 intelligences is different in terms of what it entails and how it is utilized in the real world. These are:

1. *Linguistic Intelligence*

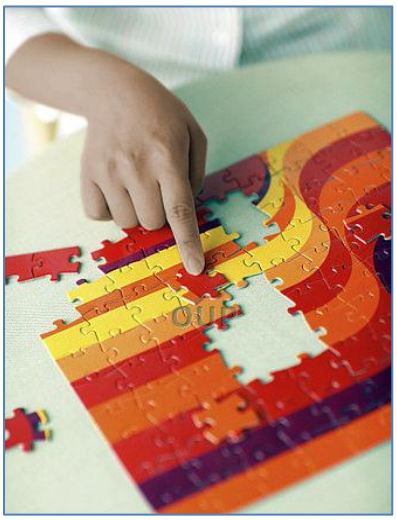
This involves the capacity to use language effectively and includes linguistic abilities such as comprehending and producing language, ability to communicate effectively and understanding what others mean. In the world around us, we see that the roles that usually require significant linguistic intelligence include professions such as journalists, lawyers, poets, writers, preachers, teachers, etc.

In the classroom, activities such as debates, essay writing, dramatization, writing of scripts or notices and word games would emphasize linguistic intelligence.

2. *Logical-Mathematical Intelligence*

This involves facility with numerical reasoning (calculation, estimation and quantification). It enables a person to appreciate abstract relations and make logical inferences. The roles that usually require logical mathematical intelligence include scientists, engineers, mathematicians, accountants, programmers, etc. One may note that this is the intelligence that is typically considered to be the primary intelligence people possess.

In the classroom, products that would require students to use logical-mathematical intelligence would include working on graphs, equations, flowcharts, making and solving puzzles, maintaining the class schedule or inventory, etc.



3. *Spatial Intelligence*

Perceiving, manipulating and transforming visual and spatial information mentally in an effective manner indicates spatial intelligence. Architects, gardeners, surgeons, navigators, drivers, sculptors, etc. frequently draw upon this intelligence in their domains.

Building of models, charts, diagrams, maps and painting are activities that emphasize the use of spatial intelligence in the classroom.

4. *Bodily-Kinaesthetic Intelligence*

This refers to the ability to exercise control and use one's body towards creation of products. Roles that require bodily-kinaesthetic intelligence include dancers, athletes, ballerinas, mime artists, actors, adventure sportspersons, mountaineers, etc.

Activities involving the use of one's body and its movements can be used to emphasize bodily-kinaesthetic intelligence in the classroom. These may include dance performances, mimes, games, craftwork, etc.

5. *Musical Intelligence*

This refers to the ability to perceive and respond to patterns of sound and communicating meaning from sound. People working as musicians, choreographers, disc jockeys, composers, conductors, etc. are frequently required to draw upon this intelligence.

In classrooms, activities that involve composing music, song writing, jingle writing, dancing to music to convey an idea emphasize the use of musical intelligence. Basically, activities that involve using music towards expression of ideas or creation of products require musical intelligence. Simply playing background music or being fond of music is not the same as using musical intelligence.

6. *Interpersonal Intelligence*

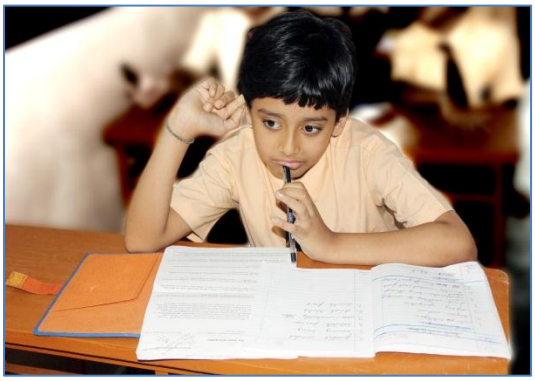
Sensitivity towards the feelings and intentions of others and using this understanding towards working effectively with people is indicative of interpersonal intelligence. Educators, counsellors, diplomats, religious leaders, arbitrators, etc. require a high degree of interpersonal intelligence in their domains.

In the classroom, products that emphasize interpersonal intelligence may include skits, role plays, group work based projects, action research, etc.

7. *Intrapersonal Intelligence*

This refers to the ability to understand one's own inner world and its reactions to the world outside. It also involves using this understanding of the self in making decisions and choosing to do necessary actions. The roles that require significant intrapersonal intelligence are therapists, activists, philosophers, advocates, spiritual or motivational speakers, life coaches, etc.

In the classroom, products such as journals, self-portfolios, diary/autobiography writing, poetry writing, artistic compositions, speech writing emphasize the use of intrapersonal intelligence.



8. *Naturalist Intelligence*

This is the ability to appreciate and understand nature and work effectively in the natural world. Persons working as botanists, farmers, forest researchers, wildlife researchers, wildlife documentary-makers, sailors, etc. need to draw upon naturalist intelligence in their domains.

In the classroom, activities such as cooking, gardening, germinating seeds, nature walks, maintaining observations of flora and fauna in the neighbourhood would emphasize naturalist intelligence.

Translating MI theory into practice

The MI theory found acceptance among many educators primarily because it validates their experience of diversity among learners. Many instructors believe that their students possess a varied profile of strengths and weaknesses and are happy to adopt an approach that addresses this variety. It must be borne in mind, however, that the MI theory is not a learning theory, nor is it a specific learning approach or pedagogical model. Gardner does not prescribe any particular way of applying the theory. Rather, educators are encouraged to understand the theory and then translate ideas into plans and practices best suited to their classroom. Following are some ideas that can be used as a starting point:

- **Intelligences can be developed**

Moving away from the notion of intelligence being inherited and fixed, the MI theory believes that intelligences are educable and can be cultivated. The more opportunities children are provided to use an intelligence and the better the facilitation and diversity of resources, the more developed that intelligence becomes.

- **MI locates intelligence in the real world**

Intelligences are raw materials we use to solve problems or make products. Therefore, domains, i.e., areas of activity rather than single intelligences become a useful tool for

considering how to use students' intelligences in the classroom. For instance, instead of trying to target 'linguistic intelligence' or 'interpersonal intelligence', students may be given an advocacy task for a certain cause such as 'Say no to crackers'. This may include activities such as making banners, addressing students in the assembly, making videos, street play, etc., drawing upon a range of intelligences.

- **Intelligences work in combination**

It is an erroneous application of MI to develop separate activities 'targetting' separate intelligences. Most domains or areas of productive activity require us to use intelligences in combination. For instance, in order to become a successful dancer, a person will be required to draw upon musical intelligence to understand rhythm, spatial intelligence to understand space, bodily-kinaesthetic intelligence to navigate the body and also interpersonal intelligence in order to connect to the audience. Children should be given opportunities to engage with such roles in the classroom that allow them to use a variety of intelligences.

- **Creating multiple entry and exit points**

This means planning activities around a topic in such a way that narrative, quantitative, logical, aesthetic, experiential and social inroads can be built for the learners to engage with the topic and express their intelligences by creating different kinds of end products. For the same topic of *'butterflies'*, for instance, some students may express their linguistic intelligence by writing poems, others may express naturalist intelligence by showing samples collected from the field and so on. Please note that this does not always mean teaching each topic in 8 different ways.

- **Avoid labelling intelligences**

The core idea of the multiple intelligences is that all learners possess different intelligences that are educable and can be honed with practice. There is no use of profiling students and labelling them as *'kinaesthetic'* or *'spatial'*. Attaching such permanent labels is contrary to the idea of individuals possessing multiple intelligences.

Finally, MI theory is not a recipe. It is a perspective for educators to reflect about their learners, existing practices and configure their classrooms in such a way that they may be able to meet the needs of their learners.

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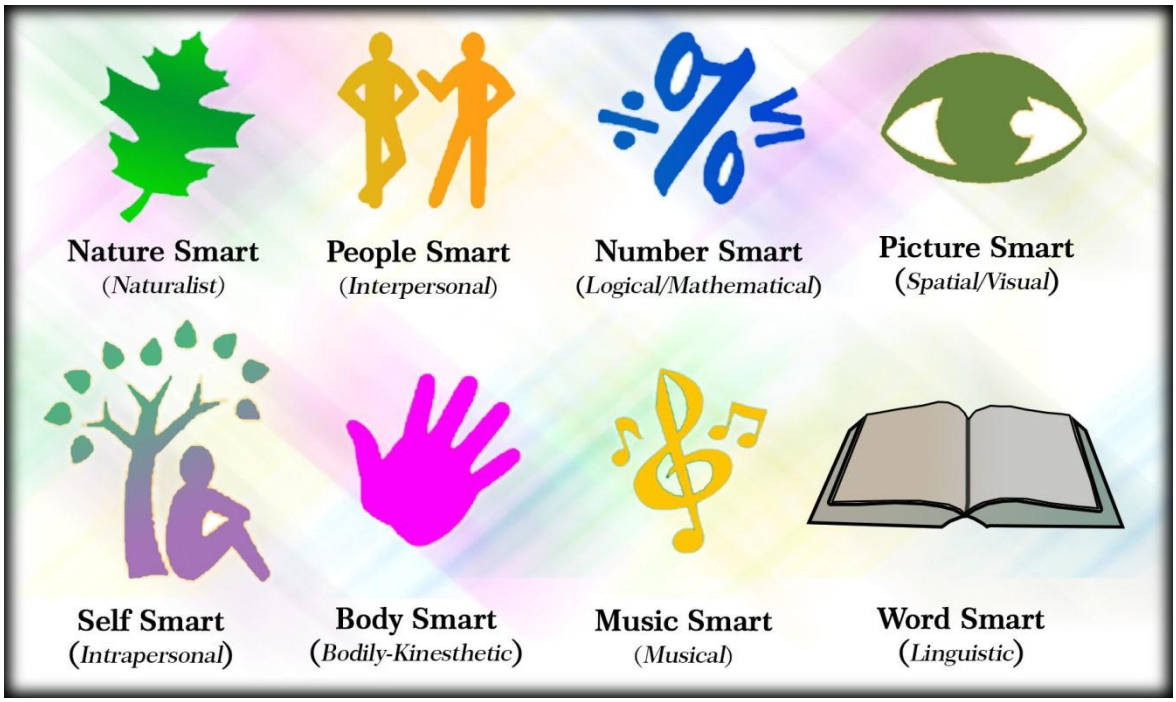
Photographs' Courtesy: Central Modern School, Baranagar, Kolkata

Lesson Plan on Exploring Multiple Intelligences in the Classroom

Priyanka Padhy



Topic: *Earthquakes (Natural Disasters)*

Grade: *V*

Subject: *EVS*

Learning Objectives

- *What is the starting point?*

Basic facts about the phenomenon of earthquake, how do earthquakes occur and some of the major earthquakes that have happened in recent years.

- *What are the central themes to be covered?*

1. What is an earthquake? How does it occur?
2. Earthquake as a natural disaster
3. Impact of earthquakes—loss of life and property
4. Disaster management after an earthquake
5. What to do during an earthquake?
6. How to help people affected by an earthquake?

Learning Outcomes

➢ *What should students be able to do after studying about earthquakes?*

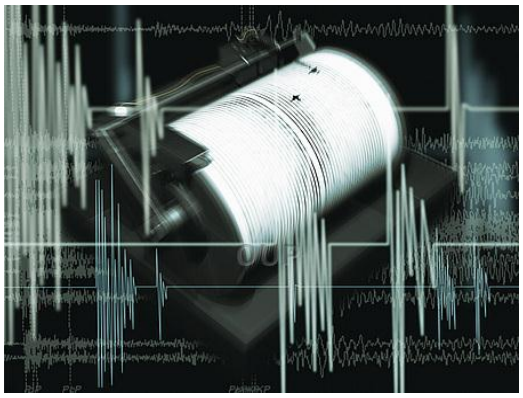
1. Reflect upon how lives of people are affected by an earthquake and the help they would require.
2. Suggest ways in which help can be provided to affected persons/areas.
3. Examine the role played by agencies such as the government, NGOs, etc. in disaster management.
4. Identify people who can be of help in such situations.
5. Demonstrate what to do to protect oneself, one's family and pets during an earthquake.
6. Compare different natural disasters such as floods, droughts, cyclones, and earthquakes and their impact on people.
7. Express the importance of neighbourhood.
8. Relate the unit and their understanding to the recent earthquake in Nepal.

Approaching the Topic through Multiple Entry Points

➢ *What activities can be planned to facilitate the engagement of all students with the topic?*

Using Gardner's entry point approach, a variety of learning experiences may be planned. This does not imply doing all topics in 8 ways. Teachers may use entry points that are suited well to the topic and accordingly address the learning goals.

1. **Narrative:** Reading of experiential accounts such as that of Bhuj Earthquake (Gujarat)/Nepal Earthquake. Similar accounts by persons affected by earthquakes in the form of stories of rescue, poems, and newspaper articles (in English/Hindi/regional language) can be read.



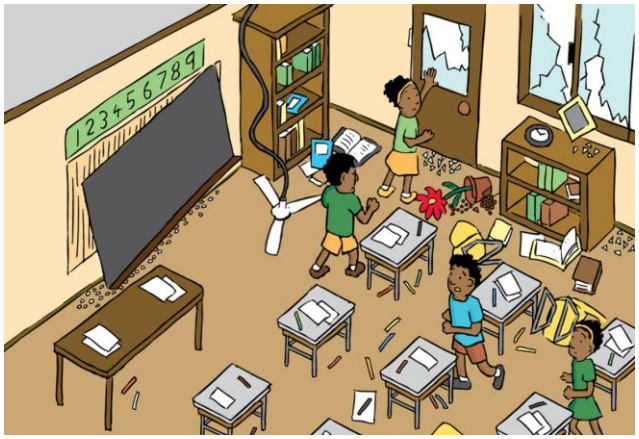
2. **Quantitative:** A discussion about the Richter scale used to measure the intensity of earthquakes can be held. Students can be encouraged to examine how the intensity of earthquakes is recorded.

3. **Logical:** Classroom discussion on survival skills and how people can be prepared for natural calamities.

4. **Aesthetic:** The class can be shown a documentary on the earthquake in Nepal. Photo exhibitions of the damage caused by earthquakes and rehabilitation work may also be shown.

5. **Experiential:** Visit to an NGO that works with rehabilitation of affected communities can be organized. People with first-hand experience of surviving an earthquake may be invited as resource persons. In order to address the diversity of experiences in the classroom, students may be encouraged to reflect upon how different classes of the society may be affected differently by such natural disasters.

6. **Bodily kinaesthetic:** A mock drill on '*how to save yourself during an earthquake*' may be carried out in the classroom/school premises.



7. **Social:** Small group discussions may be held on the importance of neighbours and neighbourhood during disasters. The students may be allowed to express the same through art work/projects.

Assessment

After the topic has been approached in a variety of ways and different learners have been engaged in diverse ways, the teacher may assess what students have understood through roles they perform or products they create. Following are some assessment activities that students may choose from, depending upon their strengths.

- **Geographer:** Develop a map of areas of the world affected by earthquakes. They may build a model on geographical changes that have resulted from earthquakes.
- **Seismologist/Scientist:** Prepare a presentation on earthquakes and seismic waves. The interested students may be encouraged to gather information about the constant changes that take place beneath the Earth's surface which cause earthquakes and share with the class this information through a simulation/presentation.
- **Activist/Artist:** Prepare an awareness skit on the man-made causes of natural disasters. Students may also be encouraged to depict how people can help each other during natural calamities.

- **Writer:** Students may prepare a survival guide with important contact numbers such as those of ambulance, fire station, hospitals, blood banks, and helplines of governmental and non-governmental organizations. Students may also be encouraged to gather and write experiential accounts of survivors with particular emphasis on the people who helped them.

- **Artist:** Creating a picture book with pictures of areas affected by earthquakes, the aftermath of earthquake, and the process of rehabilitation. Students may draw pictures about how help can be given and illustrate these with relevant captions.

- **Historian:** Develop a historical timeline of earthquakes in the past 25 years.

These products and performances may be assessed using qualitative rubrics that align with the learning goals. A test on the topic may follow to complete the evaluation process of students' understanding.

Initiating MI Practices in Classroom

1. Identifying Resources and Gaps

What resources are available to me?

- **Teaching-learning materials**: Books, charts, videos, pictures, writing materials, art materials, games, computer/internet access if available and most importantly, students!

- **School resources**: Library, computers, garden supplies, supplies from the cafeteria, supplies from the school store, materials developed by other teachers, expertise of other teaching and non-teaching staff members.

- **Resources outside school:** Museums, gardens, monuments, places of historical relevance, science centres, walking guides, resource persons in the community, NGOs, other schools and the parent community.

Do I have resources to tap all intelligences? What resources are missing? How can I enrich?

- Can add variety of articles such as old clothes, puppets, umbrellas, boxes and tins to be used as props by the actors.
- Can ask dance teacher to prepare a mix tape of relevant songs for the dancers.
- A nature corner in the class for interested students to bring samples for show and tell.

2. Exploring Existing Instructional Practices

What are my current teaching methods?

- Lecture, reading texts in small groups followed by discussion, presentations and *'Show and tell'*

Which teaching strategies can I add to my instruction to facilitate different kinds of learners?

- The teaching strategies I employ primarily focus on logical and verbal skills. I can include more aesthetic and visual methods. I may use more audio-visual materials and demonstrations in my class as well. Outbound trips may also facilitate learners with higher spatial and naturalist intelligences.

3. Providing Diverse Learning Experiences

What kinds of products can my students create?

- Projects, assignments, presentations, journals

Which Intelligences find an expression in my classroom?

- Verbal, Interpersonal and logical-mathematical

Which Intelligences are not emphasized in my classroom?

- Spatial, naturalist, intrapersonal, bodily-kinaesthetic and musical

How do I fill the gaps?

- I can start by planning more arts, movement and music based activities. Spatial and bodily-kinaesthetic intelligences may be tapped through diverse activities such as mural painting and performing a dance drama. In addition, activities that use movement creatively such as games to understand mathematical operations such as multiplication and division may be used. To emphasize naturalist, interpersonal and intrapersonal intelligences, I may encourage students to create a class museum or archive. Peer learning activities and journal writing needs to be encouraged too.

4. Using MI Towards Building Inclusive Classroom

What are the strengths of the students who struggle with learning tasks?

- Student X in my class, who was recently enrolled under the quota for economically weaker sections, comes from a rural background. He speaks a dialect of Hindi that my class doesn't understand and knows very little English. He struggles during language based activities particularly that involve working in groups. However, I have observed that when we went for a visit to a Bio-Gas plant, he enthusiastically explained the benefits of manure to other students. He displayed a high degree of

awareness about the social conduct expected in the villages and shared information about the animals and their habitats.

What activities can be planned for them?

- A visit to a nearby village could be undertaken, providing students an opportunity to interact with the local residents, get exposed to another dialect, and understand how rural communities are unique in their own way. Maintaining experiential diaries, performing small awareness skits for the village community and a class exhibition showcasing native places of all students at the end of the semester can be planned with particular focus on emphasizing the naturalistic and linguistic intelligences of student X.

5. Recording and Documenting

What tools can I employ to gather information about my students and their strengths?

- Observation log, experiential journal and photography can be used to capture how students are engaged during classroom activities and the interests and skills they display.

How will I document this data?

- All this data can be documented by maintaining student portfolios over a period of time. This may include a qualitative assessment of their work in the classroom maintained through rubrics and would help subsequent teachers of this class.

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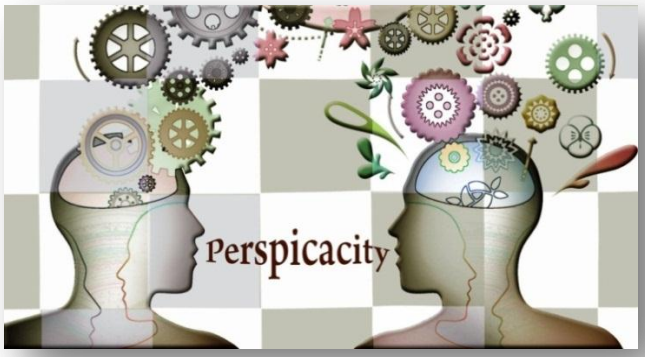
Words Section



Perspicacity (noun)

- The quality of having a ready insight into things; shrewdness or acuity in various domains.
  (Oxforddictionaries.com)

Origin (and additional information) ~ The term's first known use was sometime around *1540-50*. It originated from the term *perspicacite*, from the late Latin term *perspicācitās*, meaning "*sharpness of sight*".

Perspicacity (also called *perspicaciousness*) is a penetrating discernment—a clarity of vision or intellect which provides a deep understanding and insight.

In 17th century Europe, ***René Descartes*** devised systematic rules for clear thinking in his work *Regulæ ad directionem ingenii* (*Rules for the direction of natural intelligence*). In Descartes' scheme, intelligence consisted of two faculties: *'perspicacity'*, which provided an understanding or intuition of distinct detail and *'sagacity'*, which enabled reasoning about the details in order to make deductions. In his work, Rule 9 was *De Perspicacitate Intuitionis* or *On the Perspicacity of Intuition*. Descartes summarized the rule as:

"We should totally focus the vision of the natural intelligence on the smallest and easiest things, and we should dwell on them for a long time, so long, until we have become accustomed to intuiting the truth distinctly and perspicuously."

In his study of the elements of wisdom, the modern psychometrician ***Robert Sternberg*** identified perspicacity as one of its six components or dimensions; the other five being reasoning, sagacity, learning, judgement and the expeditious use of information. In his analysis, perspicacity was described as

"...has intuition; can offer solutions that are on the side of right and truth; is able to see through things — read between the lines; has the ability to understand and interpret his or her environment."

—***Robert J Sternberg***, *Wisdom: its nature, origins, and development*

Words Section

In an article dated October 7, 1966, the journal *Science* discussed NASA scientist-astronaut program recruitment efforts:

To quote an Academy brochure, the quality most needed by a scientist-astronaut is "*perspicacity*." He must, the brochure says, be able to quickly pick out, from among the thousands of things he sees, those that are significant, and to synthesize observations and develop and test working hypotheses.

Being perspicacious about other people, rather than having false illusions, is a sign of good mental health. The quality is needed in psychotherapists who engage in person-to-person dialogue and counselling of the mentally ill.

The artist ***René Magritte*** illustrated the quality in his 1936 painting titled *Perspicacity*. The picture shows an artist at work who studies his subject intently: it is an egg. But the painting which he is creating is not of an egg; it is an adult bird in flight.

Usage ~

i. *Artists, like great religious leaders, show amazing perspicacity in this respect.*
ii. *Your perspicacity in phrasing such a question is a source of wonder to me.*
iii. *Few can observe their impulses in life with perspicacity, and accordingly curb them if required.*