



The Quintessential Observer

By JOHN BICKART, Ph.D. | **Science Education and Spiritual Transformation** / Chapter 1: Observation versus Analysis

The Science Teacher

“Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand.” Chinese Proverb

Science teachers are increasingly reporting that they do not wish to teach information and skills, only. They feel that their students need more at this time in history. And it is quite clear that at least one thing 'more' that is needed involves character development. Both teachers and students alike are calling out that there is more to life than a job. I hear from every corner of society, "This job - this profession is not my whole life. I am also a parent - an artist - a musician - a hiker - a biker. Where is the acknowledgement that I have many facets to my life in this science schooling?"

Many feel that studying science can inadvertently take away from the quality of life. Especially in cases where a person's deeper reflections are concerned. Studies like science, technology, engineering and mathematics (STEM) have been coming under increased criticism. The problem is that these subjects can be cold, objective, and full of detail. They can overwhelm a personal growth toward feelings and concerns of the heart. In short, STEM subjects in school can be more tipped toward head development than heart development. Said another way, they can foster left brain, intellectual discipline over right brain, creative freedom.

The ancient Chinese Proverb above has been respected over the years by teachers from many cultures. It goes with the well-known method of teaching that says, 'tell - show - repeat'. But our times are calling for a more deliberate inclusion of personal growth in science teaching.

Science and Spiritual?

Perhaps we need to address spiritual growth in addition to intellectual growth. What do I mean by 'spiritual'? The word spiritual is used quite a bit. To me, it refers to the aspects of life that inspire and cause wonder - the intangibles that transform you into having fun - more than fun - a time filled with wonder - a wonderful life. It includes 'being religious'; yet it also includes what many students today call, 'being spiritual, but not religious'. It includes the heart-felt gratitude, awe, passion, or the deep love that one person feels for another or for music or an artistic creation or something in nature. To me, being spiritual means having a good life.

The sayings above are sufficient if a teacher is only striving for an intellectual understanding of conceptual material in the head. But what of matters of feeling, relationships, creativity, and personal growth of character? Many teachers of STEM subjects (and many of their students) are saying, today, that the missing parts are the very stuff that you need to love your life.

There is a simple way we can add to this ancient wisdom. I suggest that we add more OBSERVATION to our STEM courses. We have to compensate the imbalance of our times that emphasizes left brain teaching of the head. It has been my life's work to highlight right brain teaching of the heart in addition to left brain teaching. How do I do

this? I simply include a healthy amount of right brain OBSERVATION in my lessons. I follow the ancient methods of teaching, then add a little.

Is Your Student the Quintessential Observer?

The key to teaching STEM subjects and keeping balance between head and heart is OBSERVATION. If you look carefully at my method, you will notice the student receiving a four to one emphasis on chances to observe the lesson compared to analytical reflection of it. This is the central point. To offset the last several thousand years of movement toward head teaching, I believe this is necessary.

So, the object is to develop your student into a **quintessential observer** - an awakened human - the ideal scientist. Over the years I found myself developing a pattern of teaching. I hesitate to tell you this because it sounds like a rigid formula. But in order to communicate what has worked so well for me, I had to write it down as definite steps. Believe me, I did not mechanically follow these steps - I followed my nose - intuitively teaching what felt like the right thing in the moment. It's just that, in thinking about it in retrospect, my lessons could be said to tend toward this simple approach: 1) **tell** the students what you are going to do, 2) **show** it, 3) **replay** the event in the mind, then 4) step back to do some critical thinking and deeper **reflection**.

1. **Tell** what science is coming by setting the mood, not explaining concepts, yet. Student listens in observation mode - not analyzing - just taking it in.
2. **Show (Outer Observation)** Observe a live demonstration or video or description, so that

students can mindfully attend the experience, without too much explanation. Conceptual thinking, analyzing, and discussing does not come in, yet. The students are concentrating with intense attention.

3. **Replay (Inner Observation)** Observe the experience by replaying it in your mind, still not analyzing or naming or categorizing. This is the most important step. Just re-create it with your imagination, like a movie. In this recreation, nothing of your own ego or self is added or modified. The observer is still just that. This is a very active role. It is hard to observe without commenting, thinking about ideas that are triggered, or passing judgement. It is as if the demonstration is being done live, but it is totally in consciousness, only.

4. **Reflect** on what happened. This is done either within the lesson, or perhaps later – even the next day. If the students took it in mindfully, and waited a day, they may have had depth added to their perspective in the last night's sleep. These reflections can include descriptions of what happened physically, why it happened, how we can use or control it, or even how to make money from it. Be careful not to see science solely as an exploration into the world's resources as if everything was made for the exclusive use of humankind. Skirt the tendency to ask, "What can this do for me." Instead, these reflections might transcend the mechanical explanation or the profit motive to honor the *wonder* and *awe* in an event. To appreciate something for its intrinsic value like beauty and elegance, is to leave the self and embrace the whole.

Highlighting

We have described above a way to OBSERVE four times before going to analysis and reflection! So ... to take this one level deeper, consider this. What if - as you replay an observation inside your mind - a little magic occurs. What if a 'highlighter' comes into your mind and shows you the more essential things that happened and allows the inessential details to fall away. Wouldn't that be something? Think about it. When you are taking notes while someone is speaking, you try to highlight the important parts, right? Well, did you ever notice that your life has highlights. At any phase of your life, you are more interested in certain things, than others. You are highlighting. Well, perhaps the wisdom of the ideas that come into your sub-conscious are always highlighting whatever is important for you at the current phase of your life. Perhaps this is happening right now! Some studies seem to show that the sub-conscious mind is considerably more powerful than the conscious mind. So, if you replay an observation inside your mind, you have a chance for an increased intelligence to show you important takeaways from an experience.

Here is a fable (Bickart, 2020) below that portrays this provocative idea in story form.



#96 At Second Glance



A mouse was sent from heaven to earth on a mission to save a little girl. He was told to pay very close attention to the place where he would land, for it would have clues as to how to find this little girl. His instructions were very clear, “LOOK TWICE. Once with your eyes, and then with your mind.” But alas, as he descended, he saw so many new things that he could not decide which were important clues. He saw a beautiful meadow with poppies, a winding pathway, a fence with posts, a cute cottage with a red roof, a breathtaking sky full of blues and orange-pinks, and hills and dales beyond. Then he remembered to close his eyes to his outer vision and look again with the inner vision of his mind. There it was! As he played the whole scene again before his mind, he separated the inessential details and saw the essential path that directed his attention to the cottage. He opened his eyes, ascended the path and found the little girl.

INNER VISION COMPLETES OUTER VISION

Bickart, J. (2020). *Bickart's Just-in-Time Fables* (Vol. 2).
Asheville, NC: Red Shirt Interactive Group.