

Intelligent Learning

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What is Learning?

We learn all the time. We learn about many things. But one thing many people do not learn about is learning.

For example, there are two quite different ways that we learn:

- We learn facts.
- We understand the facts we learned.

People who do not see the difference between these two ways of learning tend to read books and listen to lectures with the goal of adding more factual information to their store of knowledge. They imagine that learning means pouring information into the brain, hoping it won't leak out.

On the other hand, people who do see the difference will read books and listen to lectures to deepen their *understanding* of the facts they read about or already know.

So it is very important that we understand for ourselves exactly what we do when we are learning. I guarantee, to learn what you do when you learn will

- Help you focus your mind
- Speed up your reading
- Clarify your writing and speaking
- Change how you think about other people

Two Ways of Learning

The first way we learn is by *memorizing* facts. The second way is by *understanding* facts. The act of understanding is what we ordinarily call having an "insight."

For children, learning is mainly memorizing facts. They are excellent at this. They quickly learn what parents allow and forbid. They easily invent rules of games. They outshine adults in spelling bees. They learn languages more readily. Education specialists say the best age for learning law is not in law school, but in the second grade: it's a time when the mind is a sponge thirsty for facts that stand by themselves and are not matters of opinion.

Different Sets of Questions

There are four questions that children easily ask:

- What is it called?
- Where is this?
- When did this happen?
- Who says so?

Notice that the answers to these four questions are not sentences; they are just *labels* or *places* or *dates* or *names*. This is what we ordinarily mean by *facts* or *information*. This is all you need for completing crossword puzzles and winning on Jeopardy. To know the answers requires memorizing facts. As we grow, we retain more and more facts.

For adults, memorizing continues, but learning normally moves onward toward *understanding* facts. There are four questions that adults learn to raise:

- What does this fact *mean*?
- I know for a *fact* that it happened, but *why*?
- I know *that* this works, but *how* does it work?
- I am *certain* that people did this, but *what for*?

For example, "What did Mom mean?" "Why is our tuition so high?" "How do hybrid cars work?" "What did we invade Iraq for?" These questions ask not for more facts but for *insight* into (or *understanding*) the facts we already know. The answers are not labels or places or dates or names; they are sentences, paragraphs, even books. Intelligent writers aim pass on to readers their own insights into the meaning, the why, the how or the purpose of things. Where children think of history as just dates to memorize, adults think of it as movements of a people over time that require *understanding why* things changed.

A familiar example: Sometime we "get" the answer to a puzzle and sometimes we don't.

To "get" is an experience of understanding.

The "don't get" is an experience of not understanding.

For example: What is the exact opposite of "not in"?¹

¹ The correct answer is "in." Do you "get" it? Do you "not get it"? If you didn't get it right away, not to worry. However, if you didn't notice the difference between "getting" and "not getting" a puzzle (or a joke), then you are less likely to reach an understanding of anything you do not at first understand.

Another example: Mary Ann has a brother named Chris and a brother named Colin. They were born on the same day of the same year, of the same mother. Yet no one calls them "twins." Why not?²

The Underlying Intent of Questions

However, what counts here are not the above question-words. What counts is the underlying *intent*: whether to retain facts in the mind or to understand the facts we retain. For example:

We sometimes say, "Now I understand how important it is to eat fish." Notice that even though we say *understand* and *how*, the meaning is simply, "Now I know *that* it's important to eat fish." This is not an insight into *why* eating fish is important; it's just a grasp of the fact *that* it's important. The speaker need not understand *why*.

Children often whine with words that can *sound* intelligent: "*Why* do I have to go to bed early?" But it does no good for parents to give an explanation. This is because the whining was just a statement of fact: "I don't want to." It's a complaint, not a question for understanding.

A woman may say, "The insight I got from this course is that I am going to join the discussion more often." Again, this is not an insight into any *meaning*, any *why* or *how* or *what-for*. It's a statement of a fact—the fact that she decided something. But suppose she had said, "I finally see that joining the discussion opens my mind to questions I never thought of." In this case, even though she says *that* and not *why*, she clearly had an insight. She understands something. She can explain *why* joining a discussion is important.

A man may say, "I really believe that when I exercise, my mind is more alert." Notice that he is not just stating a fact—*that* he believes it's important to exercise. He is expressing his understanding of *why*, even though his words are not precise. A more precise expression of an insight would be, "Exercise is important *because* it makes us more mentally alert."

A student may ask, "What's the benefit of doing this assignment?"—which could as well be asked by saying "*Why* are we doing this assignment?"

² Oh. Did I forget to mention Clare?

A psychotherapist may ask, "What motivated you to stop eating?"—which is equivalent to, "You stopped eating? *What for?* "

Here, then, are definitions of key terms we will use in this lecture:

Understanding is our capacity to reach answers to our questions of why, how, what for, or what's the meaning.

Intelligence is our capacity to understand.

Insight is an event in the mind when understanding occurs.

Explanation is an expression to others of what we understand.

Intelligent Learning

When we grasp a fact, we make a judgment that X is true, that Y really happened, or that Z is my purpose. Our memories specialize in *retaining* a fact. But when we *understand* a fact, we grasp *why* X is true, what Y *means*, why Z is someone's *purpose*. That is, we see connections among many facts. It is our intelligence that specializes in *understanding* such facts.

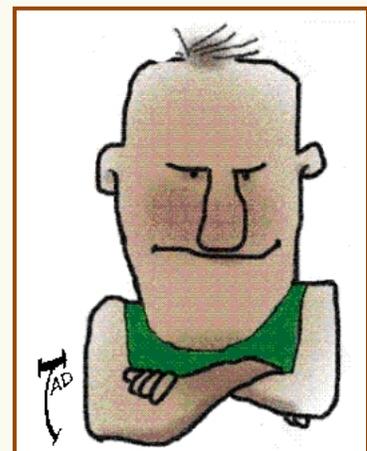
Let us define *effective intelligence* as the habit of asking questions for understanding. By this definition, Jack and Jill may have the same IQ, but if Jack asks questions for understanding and Jill does not, then Jack's intelligence is effective and Jill's is not. This happens because Jack is in the habit of asking these questions and Jill is not. As we age, we grow in height automatically, but we don't grow in effective intelligence automatically. It requires a personal discovery of our own ability and desire to understand things.

As we all know, there are many high-IQ adults who have yet to make this discovery and to bravely explore what it means for their lives. They have intelligence, but their intellectual growth is stuck at the childhood stage where learning is all about just memorizing.

Learning as Gathering Information

Adults who have not made this discovery have an ineffective intelligence. They assume that learning is mainly focused on gaining knowledge of facts. They seek to "gather information." They have yet to trust their own natural questions of what things mean, how things work, why things happened, and what purposes people have.

Here's how they regard learning:



- Learning is mainly about gathering information
- Rely strongly on memorizing.
- Enjoy sharing facts, dates, names, numbers
- Fear appearing ignorant
- Have a bias for certitude
- Easily ask What's the right word? Where? When? Who?
- Seldom ask What does it mean? Why? How? What for?
- Do not wonder about the context of facts
- Trust authorities more than their own curiosity
- Solve problems by applying recipes

We meet adults like this all the time. We can even be impressed at how much they know. But know this: Their learning is stunted. Because they seldom ask questions for understanding, they are weak on explanations. What they know are facts. And when new problems appear, they are quite puzzled about why.

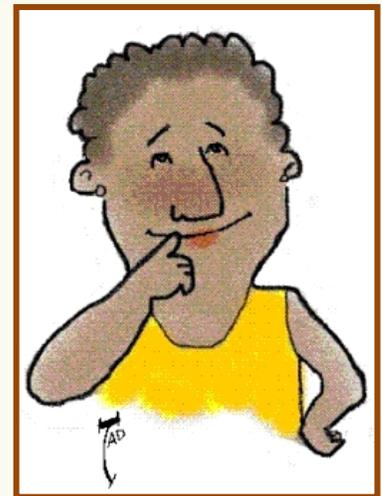
Learning as Understanding Information

Adults who discovered their intelligence and cooperate with its demands have an effective intelligence. They grow steadily in understanding things. They memorize facts; they gather information, but they also take seriously their experience of *wondering*. If they don't know a fact, they admit their ignorance. As a result, they don't stay ignorant for long.

They have discovered the difference between memorizing and understanding. This is because they noticed the difference, *in themselves*, between the kinds of questions they can ask—questions for facts and questions for understanding those facts.

Here's how they regard learning:

- Rely on intelligence to make sense out of what the memory retains
- Can live without being certain about important issues.
- Enjoy exploring various explanations of situations where certainty is not available



- Strong on questions about meaning, connections, causes, developments, and purposes
- Not afraid of appearing ignorant of facts
- Not afraid of saying "I don't understand"
- Solve problems by creative imagination and joining others in the effort
- Rely on their own curiosity to scrutinize and/or support authorities

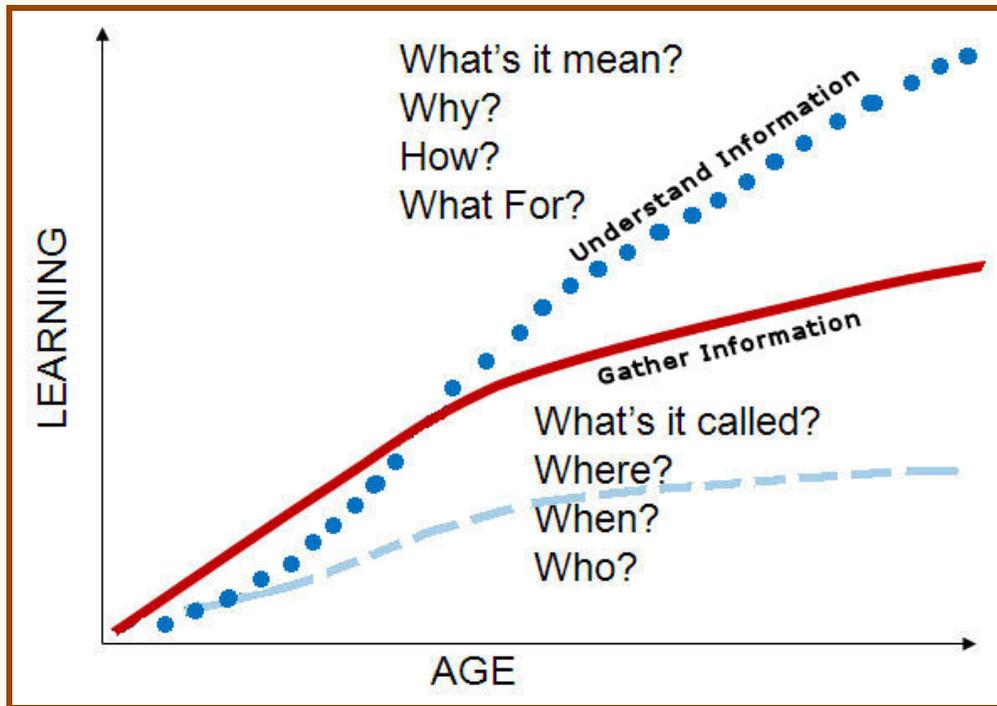
To meet adults like this is fresh air. They never come across as know-it-alls. They are genuinely interested in a wide variety of topics. They freely admit that they don't know certain facts and readily share what they don't yet understand.

Also, they don't bombard you with certitudes, final answers, discussion-killers. They realize that explanations are usually *best available explanations*, not *unquestionable truths*. They are intellectually humble enough to realize that other people's explanations may be better than their own.

Growth in Learning

As we age, the information we gather into memory and the information we understand expand. But the expansions have different rates. In the chart below, the **red** (solid) line traces how our memory lurches upward when we're young, then, as we age, our growth in learning new facts, new information, slows down. The **blue** (dotted) line traces how our intelligence does not show until 4 or 5 years old, but once we discover it, exercise it, and count on it, the pace of what we understand speeds up.

This is normal growth in people whose intelligence is effective. But in those who have yet to develop the habit of seeking understanding, the rise of intelligence persistently lags behind the rise in factual knowledge. (Dashed line – – –)



Among the facts that people whose intelligence has yet to incorporate understanding, *names* and *labels* are especially important. This shows among such people in two familiar ways:

Blame: When something goes wrong, they easily name someone to blame. "Who threw out the paprika?" "My boy got in trouble because of that Tony kid down the street."

Labeling: When they try to understand someone, they easily label them, as if everybody is just a case of something. Whether it's as a *Star* or a *Thug*, labels just indicate that they have similarities to other people.

Sometimes blame or labeling is necessary. But they are cheap and easy substitutes for the hard work of understanding people. Blame can substitute for investigating real life problems. Labeling can substitute for understanding what makes each any person unique.

A Personal Discovery

For many adults, the discovery of what being intelligent means can be a liberating revelation. Suddenly, they trust their curiosity. They lose their fear of the know-it-alls. They seek to *understand* what authorities demand. Where those demands make no sense, they speak up; and where the do make sense, they support them. In this fashion, their minds

undergo an intellectual conversion that moves them from admiring the intelligence of others to discovering their own.

When they read an article or listen to a lecture, they are very conscious of when they don't understand something. They practically enjoy noticing their questions. They imagine the mind not as a storehouse of facts but as a hound sniffing out explanations. If certain explanations fail to satisfy them, they can dwell for long periods in a poised curiosity. Moreover, they envision learning not only as memorizing facts, and not only understanding facts, but also as the effort to formulate their questions. Just being able to formulate a clear question about something that bothers them is already an act of learning. Although it is not learning something presented by others, it is learning what their own questions are, which is no small achievement.

When, as students, they do a reading assignment, they don't try to look at each word, start to finish. They skim areas where nothing bothers them, nothing stirs their wonderment. They are not intent on noticing every word but on noticing where they don't understand. They aim to answer questions like these: "What *facts* are important here?" and "What *understanding* of these facts is important here?" During multiple-choice tests, they don't look hard at the test words to see which one pops out as "true." Rather, they aim to identify which option makes the most sense to their intelligence.

On tests, they focus their intelligence in two directions simultaneously. The obvious focus is on understanding the course materials. The less obvious focus is on understanding their teachers. Suppose Professor Dom Guzman gives a test. The intelligent will not only draw on their understanding of course materials but also on their questions about Professor Guzman: What is on his mind in this question? What does he want us to learn? On multiple-choice questions, they will wonder why he lists these four choices.

In a writing assignment, they don't pepper their papers with quotations; they select quotations that support what they came to understand. They come across not as having *memorized* names of experts but as *understanding* that certain experts understand things the same way they do. They include dates not to impress teachers but to situate events in historical contexts that more readily yield understanding of events.

During work meetings, if they don't understand someone's comment, they ask for explanation. They have no fear of saying, "I don't understand." Whenever they speak and write, they are quite clear on what is established, what is just provisional, and what the remaining open questions are. You feel that everyone's learning about a certain topic is moving ahead.

I must emphasize again that fully intelligent people notice where they don't understand. They notice when they're puzzled. They notice their hunches and toy with what sort of questions they need to consider. People with an insecure grasp of what being intelligent means have many insights but they don't clearly recognize them. They have yet to learn the difference between , on the one side, feeling strongly and imagining vividly, and, on the other side, experiencing puzzlement, having an insight, and formulating questions. The habit of noticing exactly where we don't understand something vastly improves the likelihood that we will understand.

A caution: Be careful not to consider this discovery of your intelligence as a "learning style." Many teachers are aware that students have different learning styles. But these styles are only different; no single style is less intelligent than another. In contrast, the discovery of your intelligence is a normal part of growing up. Failure to make this discovery as you reach adulthood will indeed make you less intelligent than those adults who made the discovery.

So, as you plow through some difficult text, or listen to a lecture on a complicated topic, or listen to a friend explain how to work a computer, notice not only what you understand but also exactly what you do not understand. Picture a difficult explanation like a tangle of 100 wire clothes hangers. You can't untangle the whole mess by just shaking it. You need first to see how one hanger connects to another, then how that second hanger connects to a third. You see *how* they're connected by an insight; you understand part of the tangle. You can pull free maybe half a dozen hangers. Then you repeat the process. A wise teacher once said, "The key to success is to keep adverting to what has not yet been understood."³

Perhaps now is a good time to read this lecture again?

-Tad Dunne

³ Lonergan, *Method in Theology* (New York: Herder & Herder, 1972), 164. The full sentence reads, "The key to success is to keep adverting to what has not yet been understood, for that is the source of further questions, and to hit upon the questions directs attention to the parts or aspects of the text where answers may be found."