EXPLANATORY TEACHING

Telling *Facts* : Knowing *Details* :: Explaining *Concepts* : Understanding *Relationships*

According to the above analogy, *telling facts* results in *knowing details,* whereas *explaining concepts* results in *understanding relationships*.

Evidential Postulate: (An idea that *must* be taken as true because of the weight and measure of supporting evidence)

The aim of all instruction is the imparting of necessary and utilitarian information and awareness. To have utility, information must be meaningful and easily retrievable; consequently, teaching methods that lend themselves to increasing meaning and retrievability of information and understanding must be considered prime and preferred methods of instruction.

Meaning

Every **schema** exists as a pattern of relationships; thus, it is the result of acquiring understanding from some medium of instruction, whether academic or experiential. It is indeed a body of related knowledge; it's seldom limited to a single fact or piece of isolated datum. Existing schema has meaning and offers a hinge-point for related data to be logically processed, understood, and connected. It helps new information acquire a degree of *situated meaning* relative to the total base of awareness.

To increase the meaning of information in the mind of a student the information must bear relevance and *make sense*. According to Ausubel (1968), *learning that is not meaningful will not become permanent*. Importantly, the closer the nature of the information approximates the nature of the learner's current knowledge and understanding base, the more readily the learner will be willing and able to assimilate it (Bartlett, F.C. (1932) and Brewer, W. F., & Treyens, J. C. (1981)). To every extent possible new information must be aligned with the students' ***self-schemas*** (a learner's base of personal knowledge that relates to self).

Information related to self schemas is more easily remembered and more quickly recalled. Because of this, students tend to reject non sequitur or inconsistent data, especially that which conflicts with their innate sense of self (who and what they are at their core). Often, this knowledge exists as an intuitive awareness. As such, it defies the need to defend itself, relegating it to utter implausibility and futility.

Reflection and introspection into existing information can breed deeper insights if (and only if) the information *makes sense* to the learner. When things make sense they are said to be understood. This intimates that explanations have been given and received. These explanations could have taken the forms of conventional elaborations, pictorial images, or actual demonstrations.

Explanations also help to link old schema with new, revealing the relationships that can and do exist between and among them. The end result of this revelation process is a more expansive aggregate of awareness that can be manipulated and utilized to facilitate the revealing and grasping of even deeper internal and external relationships.

Schemata, which is the term used to signify groups of related schemas, is naturally given to application; for, it causes data to bear a distinctive familiarity. Through schemata, all things are evidently related to all other things; and, those relationships tend to demonstrate logical and natural dispositions. Also, because schemata is naturally (physically) more expansive than a single schema might be, schemata is more easily located during a mental search of the psyche for relevance and meaning. In essence, expansive schemata will certainly occupy a larger region on the cognitive landscape and reasonably command multiple avenues of access. Thus, it proves easier to locate a mansion on a mountain than a cabin in a canyon.

Whereas *telling* conveys explicit details and facts, which are not necessarily related, and indeed may appear to move in a single direction, *explaining* reveals direct and indirect relationships between and among simple and complex concepts; shallow and deep principles; as well as predictable, consequential, and causal effects that are probable/definitive.

Because explanations create expansive schemata, multiple avenues of recognition and multiple external access points will indeed exist. Typically, the number of individually recognizable links will be correlated with the number of individually connected items. Consider the following formula that is readily recognizable by most high school science students: **rt = d**. For the students who *know* the formula, it reads *rate times time equals distance*. But, for the students who *understand* the formula, it is indeed three formulae in one: *rate equals distance divided by time; time equals distance divided by rate;* as well as *distance equals rate times time*. In common terms, how far an object travels is always the product of how long and how fast the object moves. And, how fast an object moves is always determined by how far an object travels divided by how long it travels. Finally, how long an object travels is always determined by how far the object travels and how fast it moves. So, knowing the formula is evidently less valuable than understanding how each piece (variable) relates to the others.

Furthermore, students to whom lessons are explained seldom if ever forget. Much like the understanding of balance and rhythm gained when learning to ride a bicycle or swim across a still pond, it is unlikely that understood relationships will ever be forgotten. If anyone, including you, has ever understood how concepts balance one against the other, that person probably still does. Do you know of anyone who once knew how to ride a bicycle or how to swim across a pond but has forgotten either?

Retrievability

Explanatory teaching aids in the retrievability of information because it results in understanding; and, things that are understood demonstrate multiple points of connection. Thus, there are also multiple access points, each point leading directly to the interconnected whole. Principles of retrievability are well demonstrated by the operation of the World Wide Web. On the Web, multiple links are deliberately established; consequently, the items most accessible are always the items that have multiple *links*.

Explanatory teaching is a system of instruction that seeks to deliberately link all new instruction with all old. During normal instruction purposely relating new data to many and varied others helps to ensure that the new, when needed, will be located with relative ease. For instance, if the new information revolves around the concept of *sound waves*, just consider the points of connection that can be easily and logically made: vibrations, ears, media, five senses, echoes, reverberations, whispers, screams, audible, inaudible, phones, etc. Or, consider the concept of a *house*: wood-framed, brick, stucco, Congress, eco-system, barracks, igloo, wigwam, nuclear family, home, shelter, etc. Considering these truncated lists, are there any concepts that can't be linked to others in many meaningful ways?

Explanatory teaching always seeks *relevance*. During any session of instruction, consider the (pre)disposition and make-up of the target audience. Seek to make links to the body of the audience's core concerns; for those are the concepts that will be subject to multiple and frequent access. The rate or frequency with which these concepts are retrieved also multiplies, fortifies, and broadens the avenues that lead to them. Essentially, ideas that are thought of often are also thought of easily.

Framework of an Explanatory Lesson

Title: The Study Habits of a Genius vs. The Study Habits of an Idiot ☺

Objective(s):

Students will understand what study habits are and the value of having those that are genius-related. Then students will modify their current study habits to include those that lend themselves to their academic success and personal growth.

Introduction (frontloading):

Essential Questions:

What is a genius?

What is an idiot?

What does it mean to study?

What is a habit?

Are your study habits genius-like or idiot-like?

Definitions:

Genius - One whose mental faculty (IQ or intelligence quotient) is far above the norm – the norm being between 90 pts. and 110 pts. → 100 pt. avg. The lowest measure of genius is an IQ that equals ≈ 133 pts.

i.e. Famous geniuses: Albert Einstein, Isaac Newton, George Washington Carver, Sojourner Truth, Michelangelo, M.L. King, Jr.

Idiot -- An individual within the lowest classification of mentality. The word i*diot* is from the Greek term *idiotes*, meaning ignorant person -- (IQ ≤ 24). General use of the term: any person who's foolish or unintelligent.

i.e. Infamous idiots: Larry, Moe, and Curly; or Homer Simpson, who asked, "Why do things that happen to stupid people keep happening to me?"

Studying: Putting forth deliberate effort to understand so that one might be able to (1) remember and recite (2) recognize and match (3) process and explain or (4) manipulate and create.

Forms of Studying:

1. Repetitious reciting ≈ (repeating understood facts and details to be remembered)
   i.e. Memorizing your times tables or your eight parts of speech.
2. Repetitious pairing ≈ (repeating understood relationships to be remembered)
   i.e. Memorizing the rules of multiplication or the definitions of nouns and adverbs.
3. Thinking about and paraphrasing ideas ≈ (learning to explain understood concepts)
   i.e. Learning to explain how multiplication works in your own words or learning to write your own paraphrased definitions of nouns and adverbs.

4a. Analyzing ideas for connections ≈ (analyzing stated relationships between and among understood concepts).
   i.e. Comparing and contrasting multiplication with division or using a VENN diagram to discover how nouns and adverbs relate to each other.

4b. Pondering new possible relationships ≈ (searching for subtle implications between and among understood concepts).
   i.e. Trying to determine if multiplication has a direct or indirect relationship to other arithmetic functions or trying to determine which parts of speech depend on others to express and determine their meanings.

± Habits ±:

When it comes to habits, the news is always good and bad. The good news is this: *habits are hard to break.* The bad news is this: *habits are hard to break.* When one considers the nature of a habit (the tendency to do something or think something on a routine basis), one discovers that habits are things that seem natural to us; therefore, we see them as comfortable / accommodated parts of our *normal* lives. i.e. Drinking hot coffee (on hot summer days); Taking I-95 to work (even when there's been a wreck); Eating a sweet treat before bed (even though you're dieting); Clicking on the lights when you enter a room (even if they're already on); Lighting up in the car (even though you're trying to quit); Thinking certain groups of people are bad (even if you don't know them).

Name _____ date _____ pd. _____

1. Who can explain why it's *good news* that habits are hard to break?

   Discussion notes:

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2. Who can explain why it's *bad news* that habits are hard to break?

   Discussion notes:

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Name _____ Date _____ pd. _____

Instructions: **Read each entry aloud. Explain any related facts germane to the topic. Discuss logical ramifications involved in personal student applications. Complete the entries.**

A Genius's Study Habits	**vs.**	**An Idiot's Study Habits ☺**
1. Geniuses *study* before bedtime!		1. Idiots don't!
2. Geniuses *ask* questions!		2. Idiots don't!
3. Geniuses *try* to understand!		3. Idiots don't!
4. Geniuses *search* for meaning!		4. Idiots don't!
5. Geniuses *study in the same location*!		5. Idiots don't!
6. Geniuses *know* when they *know*!		6. Idiots don't!
7. Geniuses *care* what things mean!		7. Idiots don't!
8. Geniuses *try to make connections*!		8. Idiots don't!
9. Geniuses *collaborate in teams*!		9. Idiots don't!
10. Geniuses carry *books*!		10. Idiots don't!
11. Geniuses go to *all* their classes!		11. Idiots don't!
12. Geniuses go to the *library*!		12. Idiots don't!
13. Geniuses *plan study times*!		13. Idiots don't!
14. Geniuses *use their best learning styles*!		14. Idiots don't!
15. Geniuses *use memory strategies*!		15. Idiots don't!
16. Geniuses _____ !		16. Idiots _____ !
17. Geniuses _____ !		17. Idiots _____ !
18. Geniuses _____ !		18. Idiots _____ !
19. Geniuses _____ !		19. Idiots _____ !
20. Geniuses _____ !		20. Idiots _____ !

Note: Reference data available:..\My Documents\STUDY FOR SUCCESS.doc

References

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