Teaching Fact Knowledge

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 Chapters 8 and 9 showed how to teach classes/concepts/names, which are the most basic knowledge---that the human version of reality consists of kinds of things. We learned to use:

* Synonyms. “Huge means very big.”
* A set of examples and nonexamples. “This is alliteration….. Baggy, blue, billowy, pants… This is not alliteration. Big, saggy pants….”
* Verbal definitions followed by a set of examples and nonexamples. “Alliteration is a literary device—larger class) in which initial consonants are repeated in nearby words. This is alliteration. “Freddy’s feline is fluffy and fun.” This is not alliteration… “Freddy has a cat.”
* Morphemes. “She was inspired. ‘In’ means that something enters, ‘Spir’ means spirit or breathe. So, inspired probably means that spirit or energy entered her.”
* Context. “A fantastic time was had by everyone at the party!…. Sounds like they had a good time. So ‘fantastic’ might mean an especially good time.”

We’ll use these formats in 5-Part Lessons.

 Now we’ll learn how to teach facts.

What’s the Difference Between Class/Concepts/Names and Facts?

 There are two.

* *Classes/concepts/names are defined by common features. Definitions tell these features*. For instance,

Dogs (subject, a smaller class) are carnivores (the larger class in which dogs exist), that have four legs, a muzzle, two ears, large teeth, a tail, fur, and, when domesticated, may be pets, guards, or herders (features that all dogs have, and that distinguish dogs from other animals in the class of carnivores, such as wolves, coyotes, jackals, and foxes). In contrast,

* *Facts are declarative statements (subject and predicate) that tell the features of examples of classes/concepts/names.* For instance,

Emma (subject. The part that tells what the statement is *about*.) is a Golden Retriever dog (the larger class of which Emma is a member), a carnivore, female, with yellow fur, a feathery tail, a long muzzle, smiling face, great with kids, four legs, sharp teeth, and floppy ears (predicate: the part of the statement that *tells more* about Emma).

Note: Calling the subject of a fact statement “the part that tells what the statement is about,” calling the predicate “the part that tells more,” and asking students to “Say the whole thing,” are features of the program, *Language for Learning* (Engelmann & Osborn, 1998).

Okay, so…

What Can We Do with Fact Knowledge---Knowledge of The Features of Examples of Classes/Concepts/Names?

* We can teach *important facts*. For instance, in a lesson on the solar system:

“Our solar system (subject: what the fact is about) is in the Milky Way Galaxy (predicate: the part that tells more).”

“The Milky Way Galaxy contains between 100 and 400 billion stars.”

* We can make lists of *facts that describe* examples; for instance, mountains (Please see chapter 11.), or American vs. Canadian vs. English Golden Retrievers, to see how they are the same (compare) and different (contrast).
* We can then *construct generalizations* (rule relationships) by comparing and contrasting lists of facts. For instance,

“Mountains made of granite erode more slowly than mountains made of sandstone.”

* We can *list facts in a text* where the author is trying to make a case.

“Let’s look for, identify, and list the factual abuses and usurpations by the British government under King George III, that Jefferson cited in middle of the *Declaration of independence.*”<https://declaration.fas.harvard.edu/resources/text>

* We can (1) list events leading up to a revolution; (2) arrange these into a *time line*; and then (3) see if we can find causal rule relationships. “When X happens (governments begin to use threats and violence to evoke compliance from the People), it causes Y to happen (The People begin to form opposition groups).” See table 2.4.

How to Teach Facts

Review and Build on Prior Knowledge

 Facts are statements that tell the features of examples of classes/concepts/names. So, first we review. Chapter 10 shows how to teach what classes and concepts are…. The most important points are:

* A class is a group of things (examples) that are the same in certain ways. All things in the class of new books (texts, diaries, journals) have front and back covers, pages, and can have writing on the pages that tell about something.
* The ways that examples are the same is the definition of the class/concept and its name.
* Examples are different in ways that are not in the definition. How many pages, what the book tells about, and the colors of the covers are not part of the definition.
* A class can be in several, larger classes as the same time. For example, books are in the class of things that contain information, can be read, can be stacked, have covers, are printed, and can be purchased.

 Of course, when we review what class are, *we use examples relevant to our students*: books, tables, and shapes in elementary classes; political systems, animal and plant species, and ecosystems in higher grades.

 Ms. Redwing just reviewed the above points with her students. She continues as follows.

1. *Gain attention.*

“Everybody sitting tall, hands calm, looking at your fabulous teacher---me---as I look at my wonderful students--you.”

2. *Frame instruction.*

“Yesterday we learned what triangles are. We learned the *definition* of the class and concept of triangles. The definition told the *features* of all triangles.”

*Test/check.*

[Draws a triangle on the board.] “What is the definition of triangle? What features do all triangles have.” [Ms. R. holds up a finger for each feature.]

*Three lines…. Straight lines…. The lines come together and make three corners.*

*Verification.* “Yes, the class or concept of triangles is defined by three features. Three lines…. Straight lines…. The lines come together and make three corners.

*Frame.* Today we will learn something new. We will learn what facts are!

*Yay, facts!.... Facts are fun…. What are facts?*

[Students say, read, spell, and write fact.]

*Model.*

“Here are examples of the class/concept of triangles. Look.”

[Insert figures 21.1, 21.2. 21.3 near here.]

Figure 12.1 Figure 12.2 Figure 12.3

“We can tell something about each example. For instance, we can tell, ‘This triangle is red.’”

“Listen closely…. When we tell about an example, we are telling…facts.”

“Facts are statements that *tell about* examples of classes/concepts.”

*Test/check.* “What do facts do?”

*Tell about examples of classes/concepts.*

“Say the whole thing about facts. Start with ‘Facts tell about…’” [Partial prompt]

*Facts tell about examples of classes/concepts.*

*Verification.* “Yes, facts tell about examples of a class or concept.”

*Model.* “Look and listen. I’ll tell facts about this [Points.] triangle. [Holds up fingers.] This triangle is blue. Its lines are the same length. There is a black circle in the middle of the triangle.”

“Listen… I just told three facts. When we tell a bunch of facts, we call it a *description.* The list of facts *describes* the example.”

*Test/check.* “Your turn to tell three facts about---to describe---this triangle… Look at the triangle [Points]… Go!”

*It’s blue…. Sides are same length…. A black circle is in the center.*

“Yes, say the whole thing. Start with, ‘The triangle is…’”

*The triangle is blue; its lines are the same length; it has a black circle in the middle.*

*Verification.* “Perfect. You described the triangle with three facts.”

*Test/check.* “You turn again. Tell facts about the next triangle [points]. Describe it with facts. Point to parts of the triangle and tell what they are. Remember to say the whole thing. Start with ‘This triangle is…’”

*This triangle is red… The bottom line is longer than the sides…. There is a star at the top.*

*Verification.* “You are such good fact tellers! Yes, [Ms. Redwing points.] This triangle is red… The bottom line is longer than the sides…. There is a star at the top.”

*Test/check.* “Last one. Tell facts about the last triangle [points]. Point to parts and tell what they are. Remember to say the whole thing.”

*This triangle is yellow… It is small…. The sides are longer than the bottom…. It is on a blue square.*

*Verification.* “Yes, you described the last triangle with facts. It is [points] yellow… It is small…. Its sides are longer than the bottom…. And it is on a blue square.”

 Note, in higher grades, the class might describe examples of plants. Mr. Clemons asks his sixth graders to….

“Tell facts about these three examples of cactus plants---Beavertail, Candelabra, and Claret cup. How are they the same? How are they different?”

Finding and Using Facts

 Now that students define 🡪find 🡪 identify 🡪state and 🡪 list facts, the class applies that little sequence. Here are examples.

Examples of Lists (Descriptions)

 Table 12.1 shows fact lists on different topics.

<Insert table 12.1 near here.]

Table 12.1. Fact Lists Made from Lesson Materials

|  |  |  |  |
| --- | --- | --- | --- |
| Sahara Desert | Events Leading to the American Revolution | Hardy’s Pond | Spooky Mountain |
| Location. North AfricaSize. Length = 3000 miles. Width = 1,100 miles. Area = 3,600,000 square miles.Landscape: Mostly stone plateaus.Temperatures. Hottest large desert in the world. Average high = 100 – 104 degrees Fahrenheit. Average rainfall = 4 to 10 inches.Animals. Depending on location, fox, antelope, gazelle, cheetah, lizards, sand vipers, wild dogs.Plants. Depending on location, trees, succulents, shrubs, grasses.Human inhabitants. Nubians, Hausa, Arabic speakers. | Passage of the Stamp Act, 1765.Boston Massacre, 1770.Boston Tea Party, 1773.Passage of Intolerable Acts, 1774.First Continental Congress, 1774.Battles at Lexington and Concord, April 15, 1775.Adoption of the *Declaration of independence*, July 4, 1776. | Location. Behind Elmer Schmedly Elementary School.Shape. Oval.Surface area. 60 x 40 feet, or 2400 square feet.Depth. 10 feet in the middle.Plant life. Algae, shrubs, grasses, duckweed.Animal life. Birds, frogs, snakes, insects, fish, spiders.Seasonal changes. 1. Winter, average temperature 30 degrees Fahrenheit; plants and animals dormant; frozen surface2. Summer, average temperature 80 degrees; animals and plants active and abundant. | Location. Monster Island.Height above surrounding land. 7,000 feet.Shape. Triangular. Two peaks, with steep slopes.Composition. Granite.Tree line. Tree line (bare) begins at 2000 feet.Snow and ice storms. Permanent snow cap. Two glaciers.Climbing history. No climbers have ever returned. |

Facts About Native Peoples

 Sunny Blaze, 6th grade social studies teacher, is telling facts about different peoples that are indigenous to North America. Students will write the facts on a table in their Cornell Notes or Guided Notes so that they can compare and contrast the tribes. However, she does not tell all the facts about one tribe and then go on to the next. *No, she mixes the facts around.* Why? *Because she wants students to pay attention to whom she is talking about.*

Here she goes…

“Make a table with three columns, one for each tribe. Listen for the name of the tribe that I’m telling about. Are we ready to listen and write?”

*Yup… Let’s do it…*

“Okay, here we go….”

After a small number of facts, Ms. Blaze tests/checks by having the class (as a whole, and then by individual turns) read the facts that they have. She and the students make sure that everyone has them down accurately so far.

 When the class has listed and written the collection of facts on the board, Ms. Blaze asks them to tell ways that the peoples are the same and different. Here is the class’s table.

<Insert table 12.2 near here.>

Table 12.2. Comparing Native Peoples

|  |  |  |
| --- | --- | --- |
| InuitThey are distinct from Native American tribes.Inuit means “human beings” in English.Live in the Artic and sub-arctic (almost as cold) areas of Greenland, Canada,and eastern Russia.The oldest known places they lived are 3800 years old.Everything they do is to survive in the cold.Little plant life.Have to hunt for food. Sealsin the ocean; caribou herds on land.Sea hunt and fish in kayaks made of seal skins. Use bowsand arrows and harpoons (long spears with a barbed end).Live in nuclear family:mother, father, children, elder parents.Sometimes live in communi-ties with many families (100-1000).Live in igloos made of snow blocks, or partly underground in homes covered with skins or grass turf (chunks) held up by wooden or whalebone frames.Clothes are made of furs and seal skins. Use sleds and teams of dogs to pull them, to travel.Nomadic (move) as they follow the herds of caribou. | SiouxA Native American tribe.Lived in the Great Plains of North America.Mostly hunter-gatherers; also fished.Lived in villages populated by extended families (mother, father, children, uncles, aunts, cousins). Lived in teepees, like tents: poles covered with animal skins, shaped like a cone.Men hunted and women gathered and took care of the house.A warrior culture. Men joined fraternities (brotherhoods) where they were trained to be warriors, hunters, and to be keepers of order.Kinship ties were most important. Identify was shaped by obedience to kinship rules.Leaders were appointed by a council of elders.Yearly councils were held in the summer to decide on tribal affairs.Religion of the Great Spirit. Everything in the universe is connected.Human society is connected to animal societies (herds).Material culture of music, crafts (pottery, wooden bowls, beaded clothing), and weapons. | PuebloanNative American.Lived in Southwestern United States.Common culture among Puebloans, Hopi, and Zuni.Mainly subsistence (no surplus) farming.Dry farming: no irrigationsystems. Mainly maize (corn), beans, squash.Belief that humans emerged from underground or from under water.Some lived along cliffs or in dwellings carved into cliffs.Others lived in structures made of stone and mud.Around 1000 CE, they began living in villages in larger buildings with many apartments, on summits or in mesas (broad, flat elevated rock formations with cliffs).Traditionally, they were weavers using animal hides and natural fibers. Makers of decorated pottery.Believed in spirits who represent ancestors, who live both in the underworld and with their descendants on earth. |

Finding and Listing Facts in a Story

 Maggie O’Toole, 4th grade teacher at Circling Hawk Elementary School, just taught her students to describe things, places, and events with facts. Now she will teach them to *look for*, *find, tell,* and *list facts from stories*, to prepare them to do the same with science, history, and other text. Here’s the story.

 A Day of Bad Weather
 Jimmy was sitting on the coach eating a cupcake.
 His sister, Ida, was combing the hair on her Darbie doll.
 She said, “This is Soccer Darbie.”
 Jimmy asked, “Darbie can play soccer?!”
 Ida replied, “Of course! She’s really fast, too.”
 Jimmy said, “Cool!”

 Jimmy whispered to himself, “I don’t believe Darbie can play soccer.”
 All of a sudden, a flash of lightning lit the room.
 Jimmy dropped his cupcake.
 It went splat!
 Ida dropped her Darbie.
 Darbie went bonk!
 Then thunder boomed and rumbled loud and long.
 Ida said, “Looks like rain is coming.”
 Then rain poured down from the dark sky.

 Ida said, “I knew it!”
 It was a hard and cold rain.
 Darbie lay there on the floor, looking confused. But she had nice hair.
 Mom ran into the living room and said, “There’s a tornado warning. Run to the basement!”
 Mom, Jimmy, and Ida raced to the basement and sheltered in a corner.
 Just then came the sound of roaring, like a fast-approaching train!
 A tornado was passing the house.
 Ida said, “I wish I had Soccer Darbie at my side. She’d know what to do.”
 Jimmy said, “Darbie sure knows a lot!”

 Jimmy said to himself, “Darbie doesn’t know anything.”
 The tornado left.
 It whirled down the road.
 The rain slowed down.
 The sun came out.

 Everyone went back upstairs.
 But Darbie was…..gone!
Here is how Ms. O’Toole begins to teach her class to find, identify, tell, and list facts in text. She keeps it simple.
1. *Review what fact statements are.*
“Boys and girls. We’ll be reading about two kids and bad weather. There are fact statements in our story. Remember, fact statements tell about something. For example, ‘Today is cloudy.’ That’s a fact statement. *What* does it tell about? What’s the *subject* of that fact statement?”

*Today.*

“Right. ‘Today is cloudy’ is a fact statement tells about *today*. *What* does it tell *more about* today?”

*That today is cloudy.*

“Yes, it tells that today is cloudy.”
“Right now, we are only interested in facts about *weather* in our story. Facts about what?”

*Weather facts.*2. *Model how to read or listen until you find a fact.*
“Let’s find facts in our story. *We read until we find a statement that tells about weather*---rain, or lightning, or thunder, or tornadoes.” [Ms. O’Toole writes the rule and puts a table on the board. The title is Facts About Weather.]

“How do we find a weather fact?” [Follow up question.]

*Read until we find a statement that tells about weather.*
“Right. I’ll go first. You all read along with me until we find a statement that tells about weather.” [Model. I do. O’Toole reads….]
“Hey! Here’s a fact statement that tells about weather. ‘All of a sudden, a flash of lightning lit up the room.’ Lightning is part of weather. Rainy or stormy weather.”
“I’ll *underline* that fact in our story. Let’s write that fact on our table.”
3. *Lead (We do). Ms. O’Toole and students look for facts together.*
“Let’s find *another* fact together. We’ll read until we find a statement that tells about weather.”
[Ms. O’Toole and students continue reading…]
“’Then thunder rumbled loud and long.’ Does that tell about weather?”
*Yup.*

“How do you know it’s about weather?” [Students explain their inference.]

*Thunder is part of the weather… storms… thunder and rain.*

“Good thinking. You know that thunder is part of stormy or rainy weather.” [Confirms how students made the inference.]

“Let’s write that fact statement on our table.”[Ms. O’Toole and the class find one more fact together.]
4. *Test/check*

[Now students find facts.]
“Your turn to find a weather fact in the story.”
[Students read aloud….]
*Hey, I got one! Then the rain poured down from the dark sky.*“Yes! Melba found a new fact about the weather! Let’s write that fact on our table.”

[Students continue until the end of the story.]
5. *Retell*
“So, what did we learn about the weather in that bad weather day? Everybody, read the list of facts from our table…..” [Students read the list.]

 Next, Ms. O’Toole and the class find and list facts about persons, or about Darbie, or about the sequence of events.

<Insert table 12. 3. near here.>

Table 12.3. Table of Facts in Our Story.

About the weather About Jimmy and Ida About Darbie About the sequence of events

1. 1. 1. 1.

2. 2. 2. 2.

3. 3. 3. 3.

The class reads their lists several times, quicker each time!

The class asks,

*But what happened to Darbie?... Yeah, where’d she go?... Maybe the tornado got her… But she had good hair.*

“I don’t know, where Darbie went, class. But in Part 5 of our lesson—the inquiry part---you can add that to the story.”

*Yay! Add to the story!....*

Finding And Telling Fact Statements in a Document

Remember Alberta Feinstein in chapter 2, teaching U.S. history? Let’s take a quick look…. Now Ms. Feinstein will build on what students learned. She wants them to apply (generalize) prior knowledge of (1) how to translate statements in historical documents (the *Declaration of Independence*) into modern English: and (2) look for, find, tell, and list fact statements that a writer uses to support a position. In other words, she wants students to find out exactly what a writer says. Here she goes….

*Gain attention and frame instruction.*

“Everyone awake and full of energy? Are you ready to become so smart that you’ll need bigger hats to contain your intelligence?”

*You bet…. I already have a big head….*

“Okay. We’ve just read the U.S. Constitution. The framers wrote it from May 25 to September 17, 1787. Now it had to be read, discussed, argued about, and hopefully ratified (agreed to) by the states.

“Persons and groups who supported the Constitution as written were called Federalists. Federalists wanted a strong central government.”

“However, another group, the Anti-federalists, opposed the Constitution as written. They fe;t that it gave too much power to the central government.”

“Here’s part of a speech given by Patrick Henry (1736-1799), on June 5, 1788. He wanted strong *state* governments and a weak *central* government, which he feared would eventually become tyranny. He is presenting his case (an argument) against the just-written Constitution—that it would not prevent tyranny. He uses powerful language, but, basically, *he is stating what he thinks are facts about weaknesses in the Constitution*. The Constitution is the *subject* of his fact statements*.* The weaknesses are the *predicate* of his statements*—*the part that tells more about the Constitution.”

 “So, now we’ll read his speech. We will look for statements of subject and predicate (facts), that tell features of the Constitution. This way, we learn exactly what anti-Federalists’ objections were.”

 Ms. F. takes the class through the document.

* She models how to identify and retell (translate into modern English) fact statements.
* Then she asks students to continue more on their own.
* The class lists the facts in a table headed “Patrick Henry’s statements of facts about weaknesses in the Constitution.”

Ms. F’s comments are in brackets and italics. See the speech at <https://teachingamericanhistory.org/document/patrick-henry-virginia-ratifying-convention-va/>

Starting at paragraph 17, the class reads…..

This Constitution *[This is the subject. We will look for fact statements about this subject.]* is said to have beautiful features; but when I come to examine these features, sir, they appear to me horribly frightful. Among other deformities, [*Now he lists fact statements about the Constitution’s weaknesses*.]

* (I)t has an awful squinting; it squints toward monarchy *[Fact 1. The Constitution (subject) squints (leans) towards having a monarchy (predicate that tells more).]*…
* Your president *[subject]* may easily become king *[predicate that tells more about the president].* *[Fact 2. The Constitution makes it easy for a president to become king.]*
* Your Senate is so imperfectly constructed *[Fact 3. The Senate as described in the Constitution is imperfectly constructed.]* that your dearest rights may be sacrificed to what may be a small minority *[Fact 4. The Constitution is written in such a way that a small minority in the Senate may violate citizens’ dearest rights.]*
* Where are your checks in this government? Your strongholds will be in the hands of your enemies. *[Fact 5. The Constitution does not have sufficient checks on the power of a government that is the enemy of the people.]*
* (The Constitution’s) defective and imperfect construction puts it in their power *[the power of government officials]* to perpetrate the worst of mischiefs should they be bad men *[Fact 6.. The Constitution does not prevent dishonest and bad officials from doing mischief.]*
* Away with your president! we shall have a king: the army will salute him monarch; your militia will leave you, and assist in making him king, and fight against you: and what have you to oppose this force? *[Fact 7. The government will become a monarchy supported by both the army and citizen militias, and the people will have no opposing force.]*
* What will then become of you and your rights? Will not absolute despotism ensue? *[Fact* *8. The country will be in a state of absolute despotism.]*

(Patrick Henry, anti-federalist, speech against ratifying the Constitution. 1788)

“Now we know exactly what Patrick Henry said, and not just that, he was suspicious of the Constitution. Now let’s read all of the fact statements on our list to summarize Henry’s criticisms of the Constitution….. Then we’ll read it again, faster!

<Insert Table 12.4 near here.>

Table 12.4. Patrick Henry’s Statements of Facts About Weaknesses in the Constitution

|  |
| --- |
| Fact 1. The Constitution (subject) squints (leans) towards having a monarchy (predicate that tells more). It is written in such a way that monarchy is not prevented.Fact 2. Not only does the Constitution lean towards monarchy, but it is likely that a president will become king.Fact 3. The Senate as described in the Constitution is imperfectly constructed.Fact 4. The Constitution is written in such a way that a small minority in the Senate may violate citizen’s dearest rights.Fact 5. The Constitution does not have sufficient checks on the power of a government that is the enemy of the people.Fact 6. The Constitution does not prevent dishonest and bad officials from doing mischief.Fact 7. The government will become a monarchy supported by both the army and citizen militias, and the people will have no opposing force.Fact 8. The country will be in a state of absolute despotism. |

Lesson Part 5. Inquiry project

“Class. Now that we know how to scan, find, translate into plain English, and list fact statements from Patrick Henry’s speech, it’s your turn to do the same thing with other documents. First, read the document as it is. Then find and list the fact statements. Then make a presentation to the class of what they text says and what you found. <https://archive.org/stream/TheAntiFederalistPapers/TheAntiFederalistPapers_djvu.txt>

*Your turn.*

 Please write scripts that

* Teach what fact statements are. It’s probably best to use the chapter 11 method of giving a verbal definition first, followed by examples and nonexamples.
* Then teach students to scan a setting, describe what they see with fact statements, and then list these.
* Teach students to scan a document, find fact statements, and write them on a list.

 Well, that’s it for teaching what facts are. The next chapter shows how to teach rule relationships.

References

Engelmann, S. & Osborne, J. (1998). [*Language for learning, Grade levels pre-k - 2, teacher's guide*](https://www.amazon.com/Language-Learning-Grade-Levels-Pre-K/dp/0026746522/ref%3Dsr_1_1?crid=1ILTI0XSAZV2Z&dib=eyJ2IjoiMSJ9.gsBp15jxeAUkpMV5DW8ptOvv1hcf-aYj9MyptKNFFldS3kjZ2O8rFst_gDq-sgeOdNZZc73uqd3dN0v7iqPXxQdiNWApmLjA3bmixXcPLBDN7G7OoNPxv_2VKIPx39TgEE51GyRXqu1pPHCTsMU59pO2mtaV1g21ZiODVs-79q9AJp6ehTxJ7abbJwN4IR0v_3I-iNzbcj1-B0yCwzxCDnbQdF4iSVD1IszNI9jN4co.6SN3La5T30Wb2niijfT04gu5y1p2U9NzWar9Qn4toC4&dib_tag=se&keywords=engelmann+language+for+learning&qid=1711930941&s=books&sprefix=engelmann+language+for+lerning%2Cstripbooks%2C149&sr=1-1). McGraw-Hill.