From Pictures to Words: Linking the Right Brain to the Left Brain to Create Meaning

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Overview

This unit is designed for a high school English 2 class made up of students with average or lower than average reading skills in grade 10. It is really four mini-units that last one week each to be taught in increments of five days at a time. Teachers can use the demonstration model only; the first mini-unit of 5 days' worth of activities and worksheets, or add one or more of the following unit suggestions and tailor the worksheets as needed.

Teaching mainstream high school English brings many challenges, frustrations, and rewards to the teacher and the students. While this unit will focus on the curriculum materials mandated for the tenth grade classroom in the Pittsburgh Public Schools, the concepts can be adapted to any grade level or content area where the teacher hopes to increase reading and writing comprehension.

Through the use of graphic representations, that is: graphic novels, comic books, newspaper comics, Manga, and any original work, students will learn to construct meaning in the form of text from gleaning the content from the pictures and then writing their own words to tell the story.

Rationale

Students who read know what they like to read. Recently I asked students for titles of what they were reading. Here are a few of them: Star Wars, Darth Bane: Path of Destruction, Thug-a-licious, Jane Eyre (an illustrated, not a graphic version, and Romiette and Julio. The reading level and quality of these books varies greatly. Literature has gone through many changes in recent years and new genre names have sprung up, their section cards proudly displayed over their racks in our local bookstores.

A graphic novel is one that is told in hand-drawn frames like a comic book. Sometimes the original text of the work is retained, as in Spotlight Publications' Macbeth, with illustrations by Alex Nino and Tony Leonard Tamai. Other editions offer a simple retelling of the story as in Scholastic's versions of Romeo and Juliet and Jane Austen's Emma. An illustrated novel is not unfamiliar to most readers of my generation. The classics I read as a child all had several drawings throughout, the most famous being Alice's Adventures in Wonderland, with 42 of John Tenniel's wonderful pen and ink illustrations.

Manga is the Japanese word for comics. It covers a wide range of interests and is enjoyed by readers of all ages. It includes Anime, which most Western readers think of as kid stuff.

Urban Lit is a much more recent development. Vickie M. Stringer created Triple Crown publications to produce these "real" stories that include Crackhead, and Thug-a-licious. The subject matter is of real life (according to my teenage students), drugs, violence, bad judgment, and most disturbingly, the subjugation and degradation of women who willingly submit to humiliation and beatings by their men. This "reality" has been deemed unsuitable by a panel of educators, parents, and community leaders in our district, and the Pittsburgh Public Schools has disallowed any of these books for inclusion in any student work, including their mandated 25-books per year reading list.

While Thug-a-licious is an urban lit book and is written at a very low reading level, Jane Eyre is a classic that is among the finest of novels written in the English language. The other two books also have some merit. Romiette and Julio, a novel about two teenagers from different backgrounds who face similar circumstances as Romeo and Juliet, is written by Sharon Draper, an English teacher who writes gritty, real-life books that appeal to teens but without the smut and gratuitous sex and violence in some of the other trade paperbacks. The Star Wars book is part of a series and the genre of space exploration is a very popular one. While the story is the same good vs. evil plot, the writing in this one is sophisticated enough to challenge a teenage reader while still dealing with the simple theme of whether or not to succumb to the seduction of evil.
Beginning a study of what students read on their own will help to bridge the gap between what they comprehend from the printed page to what the curriculum demands they comprehend from the books we teach in class. To this end, an examination of how the brain works in relation to learning to read must be done in order to plan how to help the struggling and reluctant readers many teachers face everyday.

Objectives

The students will be able to:

1 Gain an understanding of how pictures can be used to communicate a story.

2 Develop an understanding of style and objectives writers pursue when writing stories.

3 Use both pictorial and audio stories as bases for writing.

4 Discuss and interpret what they have written to what their classmates have written in response to the same pictorial or audio presentations.

5 Effectively compare readings to discern points of view.

6 Respond in writing to several prompts on what they have seen, heard, read and written. (See Appendices for worksheets.)

Strategies

In any English class, major objectives include: students moving on to the next grade level with a measurable gain in reading level, a better understanding of what they read, the ability to communicate verbally about what they have read, and the ability to write in an academic style at or above grade level about what they have read and discussed. The major obstacle faced by many teachers is that many students enter grade 10 (or any other grade) reading below grade level, sometimes by two or more years. To bring these students to their current grade level in reading seems to be an insurmountable task, yet we persevere.

In graduate school I heard a story that parallels the situation that we high school teachers face. After a long search on the internet to discover the source and author of this parable I finally found it as part of a speech by physician William Harris in which he discusses the plight of American education. The following is a paraphrase of the story:

> A group of picnickers were seated on a riverbank when a baby came bobbing downstream. They rushed into the stream to fish it out when two more babies came down the river and they scrambled to pull them to safety also. Before they knew it, more and more babies were surging toward them. Frantically, they continued to pull them out until one of them thought to go upstream and see who was pushing them in.

We get new ninth graders every year who are ill-equipped to meet the academic challenges of high school. They're bombarding us with amazing speed, and we are trying like mad to pull them up to grade level in reading and math so they can perform at grade level in social studies and science. We feverishly implement new programs, give them double shots of reading with English, lab with math, and after school tutoring to give them extra help, but how did they get there in the first place?

Of course there are numerous factors to consider: environment, home life, television, video games, and a constant music feed in their ears. There are many factors we cannot control. What we have to figure out in what we can control and start there. In the meantime, though, we have to deal with the waterlogged babies that are dripping in our classrooms.

All children can learn. All educators know this, but when many students arrive in the high school classroom and still test at a 5th or 6th grade reading level, something has gone wrong, yet we teachers are expected to raise these students up to grade level in the one year they're in our classes. To analyze this, a look at how the brain works in general, how it has evolved, and how it works particularly when it comes to reading, is necessary. Following that, examining what happens in the brain of a teenager that will encourage or frustrate further reading instruction and growth will be explored. The end of all this is in trying to determine what can be done in the high school classroom to get the struggling

and reluctant, i.e. below average readers to become proficient. Lessons utilizing pictures (cartoons, graphic novels, original drawings, silent films) to help bridge the gap between little or no reading comprehension and proficient reading will be found in the Classroom Activities section.

Narrative

I write because I make progress and I make progress because I write.

--St. Augustine

The human brain is an amazing piece of anatomy. Countless studies have been carried out and documented, numerous books have been written on its capabilities, and ongoing research is consistently proving the enormity of what is yet unknown in the study of the brain. Emerging studies show how the brain processes written language, what occurs during these processes, how it can be studied and interpreted, and, startlingly, how the brain can change and adapt.

In the past, science purported that the brain had a hardwired chassis with non-replaceable parts. If a part of the brain was damaged, then so be it; there were no contingency plans for reassigning the damaged portions' jobs to another part of the brain. In the past, the notion that you can't teach an old dog new tricks was applied to the brain. The "use it or lose it" phrase made popular by Marion Diamond (Parrish) in the 1960s implied that if you didn't use your brain that loss would be imminent and irreversible. Newer studies have shown that by not using the brain, a person can definitely lose some of its capabilities, but scientists no longer believe that what is lost cannot be retrieved. Now, instead of losing a skill like dancing or playing the violin, the brain will close up that area like packing away off-season clothes; when you get back to it, there's some ironing out to do to make things serviceable again. Schlain references a study was done of brain-damaged subjects who grew up in bilingual English/Chinese households:

> Right-handed subjects who had damage to their left hemisphere lost the ability to speak either Chinese or English, and although they could not write English, they retained a limited ability to communicate in written Chinese. Those with damage to their right hemispheres could still speak Chinese and English, and although they could write English, they had difficulty writing Chinese.1

Remember the episode of the original Star Trek (yes, I know I'm showing my age) when Charlie didn't like Uhura's song and erased her ability to speak or understand English? She could still speak Swahili, but Nurse Chapel had to reteach her English. She was reading aloud and pronounced "blue" as "bloo—ee." It seemed funny at the time but in light of all of these studies it makes sense.

Times have changed. Scientific research has changed and grown, and as this has happened, so has the attitude toward the brain's recovery capabilities. To begin this study, a look at how the brain responds to written language is necessary. Following that research, a study of how the brain monitors, adapts, redirects, and repairs itself as needed

will be examined. Finally, current sources for the serious educator to keep apprised of the newest research as it becomes available will be included.

Leonard Schlain is chief of laparoscopic surgery at California-Pacific Medical Center in San Francisco. In addition to his work, he finds time to write books like The Alphabet Versus the Goddess: The Conflict Between Word and Image, and Art and Physics: Parallel Visions in Space, Time, and Light. It is the first of these that pertains to the study at hand.

As a surgeon, Schlain has had experiences many of us will never know. While teaching is a noble profession, unlike the surgeon, I am never the only thing standing between my students and death. The idea for the book came to him while he was on a trip to Greece immediately following the publication of his book on art and physics. I find it interesting that the brain picks times like these to pop open a new idea. Imagine having finished a book and relaxing on a trip to a place you'd never been before. Your mind is free; outside of your daily routine, you have no chores, meetings to attend, or suits to take to the cleaners. Your mind takes the time for refreshment and a new idea finds room to bounce around. Here is what happened: on a sightseeing trip, Schlain's group was taken to see Mary's burial place in Ephesus. What struck him was that Jesus' mother chose a pagan burial site. This seemed unusual until he started thinking about the structure of civilizations in the past. When he began to ponder the shift between civilizations that were matriarchal becoming patriarchal, things started happening:

> I was struck by the thought that the demise of the goddess, the plunge in women's status, and the advent of harsh patriarchy and misogyny occurred around the time that people were learning how to read and write. Perhaps there was something in the way that people acquired this new skill that changed the brain's actual structure (Schlain viii).

Schlain's book describes forms of communication from oral to written language in cultures throughout the ages. In particular, societies that developed alphabets changed significantly from those societies that remained verbal or that used ideograms or pictograms. Through his research, Schlain discovered that societies who learned to use alphabet systems of reading and writing were forced to develop their brains in a way that strengthened their patriarchal feelings and diminished their matriarchal ones. Thus, learning to use the alphabet devalued women in these societies. Of course, the advantages of this alphabet system were so important that no one seemed to notice.

As literacy became indispensable, its further development became unstoppable: “Literacy, once firmly rooted, will eclipse and supplant speech as the principal source of culture-changing information” (Schlain 4). Literacy is a bridge. Reading allows us to picture things that are not physically present, to experience the emotions of others, and to ponder ideas that were previously unknown to us. Schlain explains it thus:

> Images are primarily mental reproductions of the sensual world of vision. Nature and human artifacts both provide the raw material from

> the outside that the brain replicates in the inner sanctum of consciousness. Because of their close connection to the world of appearances, images approximate reality; they are concrete. The brain simultaneously perceives all parts of the whole, integrating the parts synthetically into a gestalt. The majority of images are perceived in an all-at-once manner (Schlain 4).

On the other hand, learning to read reorders everything. Instead of the whole picture, readers experience the revelation of meaning one symbol or one chunk at a time: "Reading words is a different process. When the brain scans distinctive individual letters arranged in a certain linear sequence, a word with meaning emerges" (Schlain 4).

Try this: Reread the preceding quote, then try to rewrite it without looking at it a second time. Your brain will retain the main idea but may rearrange the vocabulary. For example, the sentence, "When the brain scans distinctive individual letters. . . " may stick in your mind as: "When the brain processes specific individual words. . ." It's a matter of mentally digesting the theme of what you're reading, much in same way we remember the story of a foreign film as though we've heard it in English. We combine all the elements--the visuals, subtitles, and the cues in the actors' voices.

In addition, our brains function differently from those of other animals in that only humans can ask compound questions and then discuss and dispute them, while other animals can signal or inform only. The fact that we want to discuss and dispute is important in itself; Marshall McLuhan made this clear decades ago with his idea that the means of communication is more important than the message with his statement that the medium is the message. If this is still a valued assumption, consider the students in our classrooms who fight removing their earbuds.

If the medium really is the message, then the "plugged-in" kids we are teaching lose their juice when their plugs are removed. What does this do to their brains? I don't have the answer to this one. I hope I find it.

Now let's look at the hemispheres of the brain. Anyone who has even a passing interest in the brain knows that we humans have a right brain and a left brain. These are referred to as hemispheres. What many people who aren't doctors and scientists don't know is that the two hemispheres are connected by the corpus callosum. Before we go into what purpose the corpus callosum serves, let's look at hemispheric lateralization and why it occurred. Schlain says that this split in the human brain happened when the brain needed to accommodate language. The corpus callosum is a conduit that sends messages between the hemispheres so they know what each other are doing.

In her lecture describing her own experience of having a stroke, Jill Bolte Taylor brings a real brain on stage to make a point about the hemispheres and the corpus callosum. (For a captivating twenty minutes, log on to TED.com and watch Jill Bolte Taylor's "My Stroke of Insight.") This conduit is larger in women. It is responsible for the multi-tasking that women have had to do throughout time. In early times, women had to gather food, prepare food, run the household, and care for children. At all times, any mother had to be ready to do more than one thing at a time. Men, on the other hand, were forced to be single-minded and focused. When early man was out hunting, he had to have strong focusing skills to alert him to the approach of his prey (or any other creature who

considered him to be its prey). A distraction (or multi-task) could spell disaster for the male whose mind was not entirely on bringing home dinner without being eaten himself.

While the right brain is concerned with doing, the left brain is more content to just be. Schlain uses the example that the right hand picks berries, but the left brain has willed it to do so. Compensations do occur, though, in people who have lost part of their brain functioning, as earlier cited in the example of the English/Chinese subjects who suffered brain trauma. An interesting feature of brain-damaged soldiers was discovered in World War I when doctors were surprised to find that many of these injured soldiers, who could no longer speak a word, could still sing songs they had learned before their injuries. Their right brains had maintained the gestalt of the whole song, enabling them to reproduce it. I have a similar story: one Christmas, I was caroling with a small group of other choir members from my church at a local retirement home. We had reached the floor where some of our church members were in assisted-living apartments and stopped to sing. In the middle of one of our familiar carols, a door opened and an elderly woman approached us using a walker, followed by her aide. She was singing with us, tears streaming down her face. With extreme difficulty, we managed to finish singing without breaking off into sobs ourselves. At the end, the woman stood mutely, tears still wet on her face. Her aide, also in tears, told us that her patient hadn't uttered a word for over a year. Numerous other examples can be found that support the theory that the right brain's memory will pick up a whole chunk of something that the left brain can no longer process in a linear manner.

Schlain quotes Robert Ornstein to illustrate the effect of learning to read and write as a youth and how it affects the mature brain: "The evidence indicates that learning to read and write a language in youth influences the way the hemispheres work (Schlain 40)." Does this mean, then, that the students we are trying to teach are lacking a fundamental ability to learn as we have been taught to teach them? Or perhaps I should translate that last part; can our students learn through the techniques we are using to teach them?

If the right brain gets the big picture and the left brain follows a linear progression to decipher and reorder, if necessary, parts of the picture, what do we do with the students whose brains were never wired as young children? That is a bit of an overstatement, of course; their brains are obviously wired, but how? And if the pathways that are required in order for these students to learn the way we have structured our teaching are absent, how can we forge them? Even more urgent is the question of how we can really determine what's missing. As a high school English teacher, I have no special training in diagnosing brain function. I can only observe, just as a mother who takes a child to the doctor can say, "He just doesn't look right today," a classroom teacher can read a small sample of what a student has written and say, "He's just not processing the way most of the other students do." Following this is a sometimes agonizing trial of observation of the student's behavior, work habits, and general progress (or lack thereof) in the curriculum.

Let's take a look at a student we'll call Jim. Jim is the classic example of "driven by a motor." He comes into the room energetically. He is usually singing. Before being able to sit down, he makes the rounds of the room, greeting each student. If someone fails to respond to Jim, he will provoke a response by doing something childish like knocking a book off the desk or snatching up a girl's purse. Sometimes he reminds me of a puppy who will do anything to get your attention, but with Jim, it's only on his terms. When I

talk to him, he shuts down. He doesn't want my attention if I initiate it. I use verbal cues to redirect him: “Jim,” I'll ask, when all of the students are sitting quietly reading independently, “what are you reading?” Sometimes I will get the deer-in-the-headlights look from him, and he will look around as if surprised to find everyone else reading quietly. He will then mumble an excuse and go and get a book. He doesn't read it, though. He will open the book and then stare off into space, watch another student, or start singing to himself. If I could figure this one out, I'd be in hog heaven or at least glorified by other teachers who have their own Jims in their classrooms.

Now, that is just one of the challenges we teachers face. What do we do? We can recommend the child for evaluation, but if the parent doesn't agree, we're stuck. Then we have the additional challenges. In this same class, suppose you are faced with a dyslexic child. As a content area teacher with no training in how to teach dyslexic children, you fumble through trying to help him.

Another obstacle many of us who teach in large urban areas are facing is the angry child. When you have a student (or many students) who willingly offer the information that an immediate family member is in jail for life for murder, you feel a curious mix of emotions. First, you feel for the student(s) who are dealing with this anger, feeling of betrayal, and inability to process these feelings. On the other hand, though, you feel that you are in a community where children feel they can share this horrific information with their peers; they are not alone. I have watched and listened, amazed at the revelations students bring out during classroom discussions, most recently, in a response to an article in our book about crime, punishment, and teens. I want to cry, knowing that these kids have loved ones they can rarely visit, and I want to rejoice that they have the comfort of knowing that there are others like them with whom they can share these feelings. And then I want to cry again because there are so many others in the same situation.

When these children suffer, their education suffers. When they are deprived of a loved one's company, they often do not read. It isn't that they are not physically capable of reading; Schlain points out that people of below average intelligence do learn to read. It is because of the structure of the alphabet that this is possible and it is this capability that removed the hegemony from the elite. If kids are not reading, have their brain structures been compromised in some way or is it emotional? Can I discover any answers?

Those who can read see twice as well.

--Menander (4th c. BCE)

Maryanne Wolf's recently released Proust and the Squid examines the brain from a more scientific and less historical view. A professor of child development at Tufts University, Wolf brings examples from scientists to a level that can be understood by humble educators like myself. Beginning with the statement that humans were never born to read, Wolf describes the human brain as nevertheless “poised” to acquire reading. A large section of the book describes the development of reading and how normal brains go about it, while the last section deals with people whose brains are organized differently and therefore face reading challenges, specifically people with dyslexia.

Since our brains did not originally have specific centers for reading as they do for speech and vision, our ancestors had to forge pathways to accommodate this newly

invented skill. This brings us to the term plasticity, which has occurred in everything I've been reading about the brain for the last several months. Our brains have the wonderful ability to change, reroute, and create what they need. When the need for processing written symbols into meaning became evident, the brain formed the necessary components to accomplish it. Oral communication is inherent; we say something and it is interpreted or misinterpreted by others who have audio capabilities. We use visual cues which are also assigned a specific area in our brains. Since we humans have evolved enough to laugh, ask why, and argue, we also must constantly keep up with the demands put on us by society. Writing and reading what was written became indispensable and our brains rose to the challenge.

Let's get back to those students who are two or more grade levels below what is expected when they reach high school. When, I have been asking, did they fall behind? Due to the volume of reading I have undertaken, I have unearthed the following startling statistic:

> A prominent study found that by kindergarten, a gap of 32 million words already separates some children in linguistically impoverished homes from their more stimulated peers (Wolf 20).

This refers to the number of words a child hears spoken in his presence, not the number of words he knows. Technology is now blamed for the waning practice of reading among many Americans, but while we embrace technology for what it can do for us, we must not let other brain functions atrophy in the process. It would be wise to treat technology in the same manner as ambition, as a good servant but a bad master.

Wolf suggests that a remedy to this word poverty is to educate parents about dinner table talk and to provide books to children in impoverished households. This sounds like a great idea and will undoubtedly help many children, but just like those babies in the river, what do we do with the ones we have now?

Ask an adult who is an avid reader, and she may tell you about the first book that hooked her. This memory may take on a rhapsodic tone as your friend describes the royal blue cloth cover and the gilt lettering, the line drawings inside, and how much she hated having to put down the book because her mother demanded she come to the dinner table. All right, I'm the friend. What's more, the book was called The Happy Summer. I can't find it so I can't supply the author's name, but the main character was a little girl named Cathie, and I could hardly get through my rare steak, fried potatoes, and fresh asparagus because I wanted so much to get back to her adventures in the big city in her high-button shoes.

Reading becomes a habit and some people just never seem to get the habit. This makes it doubly hard for those of us who are readers to figure out what all those non-readers do with their time! Sometimes I think reading teachers should be those people who struggled to read and mastered it instead of those of us who took to it early and would rather read and write than do anything else.

What actually happens when a person learns to read? Wolf quotes Thomas Carr to begin this explanation:

> A critical step in learning to read involves mastering the perceptual properties of written language, so that the visual system can talk effectively to the language system. The product of this learning is a new set of computational structures in the prestriate visual cortex that did not exist prior to reading (Wolf 147).

The visual cortex undergoes changes that allow the brain to perform efficiently when it reads. Not only does the brain decode the letters and symbols on the page, it engages the visual cortex in viewing chunks of printed material and reading it more than one letter at a time. Think of teaching a young child to sound out her first words. I used the McGuffy Reader series with my own children before they entered school. The first lesson picks a vowel sound and builds words around it, such as fat, and black. I recall the story to be something about a barnyard and a fat, black hen. Once we glance at a word and read the whole thing as a chunk, we have progressed along the linear path necessary to make sense of all these lines and squiggles on the page. As we become expert readers, we are able to read several words at a glance. Any classroom teacher who regularly reads aloud in class will affirm the necessity of reading several words ahead mentally while speaking the immediate words in order to supply the appropriate inflections. It's a fantastic accomplishment, challenging and satisfying when you can do it effectively.

Further scientific explanation of the above phenomena is explained by our eyes' ability to see ahead into the parafoveal region. This, eye movement expert, Keith Rayner explains, allows us to see fourteen or fifteen letters to the right (for right-to-left language readers) without changing eye movement. Fascinating stuff.

When we read, we are employing the automaticity we have trained ourselves to acquire throughout our reading years. This is indeed so automatic that we don't think about it until we're teaching children who haven't yet developed it. Children also have a parafoveal region, but it only extends forward to include about eight words. How many times have you listened to a child read aloud and thought that he wasn't making any connection between one word and the next? Think about high school students reading Shakespeare aloud; it can be an excruciating experience for the listener when a less than proficient reader volunteers for one of Marc Antony's long speeches.

Rayner's study extends into what happens later in life. Adults were studied in two groups by researchers in Portugal. One group had no reading skills and the second had some literacy. Both groups were rural people of similar socio-economic status. These adults were studied in their sixties and were found to have different brain structures according to whether or not they were literate. Their thinking was influenced by their literacy, and that influenced every aspect of their lives. The ability to read allows the brain to solve problems differently than those who can't read. The reading brain has more options and more to do and it functions better and longer than the more idle brain which can easily slip into dementia. The moral of this story is: read and you won't fall victim to Alzheimer's. That's a little too simplistic, of course; there is no guarantee that a person will never develop Alzheimer's if she is highly literate, consider Iris Murdoch. There is also no guarantee that an idle brain will definitely be doomed to dementia, but scientific research has proven that the odds are stacked that way.

To maintain the plasticity in our brains, we must utilize them in a variety of ways. Just reading or just watching TV won't do it. "The electroencephalogram (EEG) brainwave patterns of someone reading a book are very different from those of the same person watching television" (Schlain 408).

Now that we know how and why all of this happens, what do we do in our classrooms to handle the students who have missed several years of this development? James Bucky Carter has the right idea with his book, Building Literacy Connections with Graphic Novels: Page by Page, Panel by Panel. The operative word here is connections. My students don't seem to connect to anything in what we read. It's as though their visual center is not hooked up to their reading ability. Very few of my students will say they "see" anything when we read. So far, I have used small snippets of films to piece out the background of what we're reading. After the opening chapter of Great Expectations, I showed about six minutes of the film. Before doing that, I talked unendingly about the juxtaposition of the landscape, the gibbet and the pole with the light, but it wasn't until they saw the pictures that they could grasp the idea that these lines created a frame for Pip's life.

Carter suggests wooing the students toward the written word through pictures. This seems a viable plan and to try it out, I used the "Hydrant" story from his book that is taken from Will Eisner's book, New York, The Big City. Carter shows how this six-frame story can be used to stimulate storytelling. The pictures show an overweight woman in a drab dress filling buckets with water from a running fire hydrant. Her broken-down building is next to an empty lot, and her apartment, on the second floor, has a non-working sink, a radiator for her to heat her baby's food, and her infant in his orange-crate bed. When she feeds him his bottle, she looks over her shoulder at postcards of the islands stuck into her mirror frame.

I decided to try this out with my creative writing class. This class is made up of seventeen students from grades 9—12 who range from mainstream to gifted. The results were quite interesting. The first two students to volunteer to read aloud their stories simply said that a woman had to carry water from a hydrant to make her baby's bottle. There were no details except to conjecture that the woman was black or Hispanic. These stories were from ninth grade boys who are both gifted students. Following that, two girls shared their stories. Both of these ninth grade girls are mainstream students and their stories were internal dialogues of the woman's thoughts and fears, showing insight and empathy.

At this point in the class I was worried that none of the males in the class could "get" it, but only two samples weren't enough. I was enchanted when I heard the story of another ninth grade gifted student (both excerpts below are given without corrections. Students wrote for fifteen minutes and handed in their papers with no revisions.) Matt's account made me feel I was there and took me into the internal workings of the character without the internal dialogue:

This introduction brings the reader into the desolation of environment and outlook for the future.

The woman's heavy footsteps on the concreate stairs laden the air with

> the only noise. The splashing of the life giving tube always gave her hope that they would make it, but not today.

He goes on to refer to the woman's dwelling as "her den of sorrows." The old stairs threaten to give way but today they only "moaned and creaked in agony with each step," reflecting the condition of her life. Her meal consists of discarded vegetables from the defunct farmer's market. When feeding the baby, her despair becomes complete:

> The baby cried and whined for milk and the woman complied with the only milk she could find in two weeks. It was the last. The woman eased back in her rocking chair, and stared at days bygone as if searching for an ansewer to the uncertain future (Matt, grade 9).

This story evokes emotions as well as images in the brain of the reader. While we are not actually looking at the six frames of drawings, we have been provided with a detailed and heartfelt description. A few weeks later, students were asked to write a description focusing on one sense. See if you can figure out how Tessa surpassed the objective of the assignment to include her own agenda:

> It's dark, not so dark you can't see anything, but dark enough that you can see only outlines of things. I'm alone. I'm on my way to lose my thoughts because staying home, I suffocate myself with "what-ifs" and trying to think about the future. . .my future. I step carefully on the muddy path trying not to step on the knotty roots sticking up out of the ground. As I start to slow down my pace I stare at the sky. I love looking at the contrast of the wild, "black" branches twisting and turning against the navy blue sky. The moon is out and it is full. It's so bright I think it's as bright as the sun. I'm able to see everything that flies across it including the little bugs. There are so many stars out tonite that if I didn't know any better I would think I was back home in the country. If only life could be as simple as a stroll in the woods, even as beautiful. When I look at the sky I feel so little. . .so insignificant. . .but in a good way. . .I've successfully done what I've come here to do . . .It's amazing what fresh air and some moonlight can complete (Tessa, grade 11).

This piece wowed me. It fulfills the assignment of writing about one particular sense (sight) but it uses sight for a larger purpose; Tessa has used the assignment as a means to write about what she was feeling rather than simply describing what something looks like.

Since this is a creative writing class and most of the students chose to enroll in it, I do expect high quality efforts. With a regular English class, the results will probably show a wider gap in both length of the stories and depth of understanding and putting into words what the students understand.

Before Teaching the Classroom Activities

Prior to beginning with the lessons in the next section, you may want to choose an easy example. For this, you will need to scout out the materials because they are under copyright and I can't include them here. Starting with a story that all the students know will make it easier to teach them to put into words what they see in the pictures. For example, a fairy tale that has been made into a Disney film is usually a good choice. Recreate the story line in simple pictograms if you are artistically talented, or find a children's book and eliminate the text. Be sure to leave a clear space or cartoon balloon for the students to write their text. Following the simple story, move on to a chapter or a part of a short story that you have already read with the students or that they have read independently. Consider using Will Eisner's "Hydrant" story. It can be found in his book or Carter's book, both of which are included in the Bibliography.

Another approach would be to show a foreign language film clip without the subtitles and then ask the students to fill in the text. Any film with the sound turned off might work as well. We know that there are audio and visual learning styles, so experimenting with both of these ideas could let the teacher learn how his/her students learn most effectively. This could be done with clips from the Truffaut film of Fahrenheit 451 as well.

Classroom Activities

Mini-Unit One—5 days
Do this activity after you have read Fahrenheit 451. (For a detailed plan on Fahrenheit 451, go to the Yale National Initiative website at: http://teachers.yale.edu/curriculum and choose units from 2006, volume II; The Supreme Court in American Political History, "Our Right to Read, to Learn, and to Think: Ray Bradbury's Prediction.")

Monday—Introduce the concept of writing a story based on pictures. Distribute the handout to the students (see Appendix A). Ask the students if they can tell the part of the story contained in the picture. After guessing at the meaning of the story, discuss the section of the book it illustrates (see Appendix B). Discuss how the pictures cued what the words should be in the story. Tell them they will write one tomorrow with a new set of pictures.
Tuesday—Distribute the Appendix C handout. Decide whether you will allow students to work in pairs or groups or by themselves. Follow the directions on the handout.
Wednesday—Distribute the Appendix D handout, the peer response form. Explain how to use the form. Read aloud the stories. Discuss the stories the students have invented and allow time to fill out the peer response forms.
Thursday—Create a wall display/bulletin board. Make a larger-size photocopy of the blank story and put it in the center. Surround this with the students' work and display.
Friday—Students will write a reflective essay on the assignment according to the assignment sheet in Appendix E.

For the following (optional) units, replace the Monday activities with a library research day for students to find pictures to use or provide magazines and art supplies for the students to create their own pictures for their stories. You can also visit the following sites where royalty-free pictures can be found:

http://www.gettyimages.com/Home.aspx
http://pro.corbis.com
http://www.istockphoto.com

Mini-Unit Two—5 days
Fall and Winter Holidays

Mini-Unit Three—5 days
Martin Luther King, Jr./Black History Month

Mini-Unit Four—5 days
Spring Holidays

Reading list for teachers
Bradbury Ray. Fahrenheit 451. New York: Random House, 1982.

Carter, James Bucky. Building Literacy Connections with Graphic Novels: Page by Page, Panel by Panel. Urbana: National Council of Teachers of English, 2007

Reading list for students

Bradbury Ray. Fahrenheit 451. New York: Random House, 1982. (or whatever books are in your required curriculum)

Classroom Materials

copies of Fahrenheit 451 (or your choice of novel)
film of Fahrenheit 451 (or of the above novel—optional)
drawing paper
pencils
bulletin board and large paper for it

Annotated Bibliography/Resources

Bradbury Ray. Fahrenheit 451. New York: Random House, 1982.

This quintessential dystopian novel heralded the horrors of today's society nearly 50 years in advance. In Bradbury's bleak future, citizens are forbidden to read and lead lives without meaning, often killing others and themselves. A cautionary tale that has proven its predictions, this book provokes the intelligent reader to continue promoting literacy before it's too late.

Carter, James Bucky. Building Literacy Connections with Graphic Novels: Page by Page, Panel by Panel. Urbana: National Council of Teachers of English, 2007.

Carter has provided examples from many graphic novels along with suggestions for infusing them into the classroom. This collection of graphics is a great resource and a wonderful introduction for the novice to graphic novels.

KnowledgeNews. <http://www.knowledgenews.net>. Champaign, 2008
This is a site that offers a free trial subscription or a lifetime membership of $39.00 for science news on subjects like the brain, intelligence, IQ testing, and other topics. It presents scientific information in a format that allows non-scientists to comprehend. It also keeps the reader up-to-date on the latest developments and buzz-words like neuroplasticity.

Moore, Alan, and Dave Gibbons. Watchmen. New York: DC Comics, 1995.

This Hugo Award graphic novel was groundbreaking. Made up of twelve issues of comic books, the story is that of heroes living their everyday lives while holding off a takeover by evil forces.

Restak, Richard, M.D. Mozart's Brain and the Fighter Pilot: Unleashing Your Brain's Potential. New York: Three Rivers Press, 2001.

Restak's book offers twenty-eight do-it-yourself ways to keep your brain from shriveling up and leaving you in dementia land. Written in a non-technical way, Restak uses scientific data, personal anecdotes, and puzzles to spur the reader on to rejuvenating his or her brain.

Schlain, Leonard. The Alphabet Versus the Goddess: The Conflict Between Word and Image. New York: Penguin, 1998.

Dr. Schlain takes the reader on a journey from the earliest civilizations with written languages to today, outlining how the introduction of a linear alphabet distinguished societies from those with no writing and those with ideographic writing systems. The

adoption of our alphabet is what reorganized our brains and changed us from a matriarchal to a patriarchal society.

Parrish, Kathleen. “The Power of the Mind: How to Keep Your Brain Young for Years to Come,” Better Homes and Gardens, May 2008, Volume 86, Number 5, p. 276.

For many people, reading research about the brain is not on the daily to-do list. This article alerts the average magazine reader (women, in particular in this publication) to the benefits of exercising the brain for a long and productive life.

Saleh, Amany. Principal's Research Review, March 2008, Volume 3, Issue 2, pp. 1--3.

This is a newsletter for school principals that brings to focus specific topics of interest to educators, particularly items pertaining to learning, brain function, and in this issue, the notion of neuroplasticity.

Spiegelman, Art. Maus: A Survivor's Tale: My Father Bleeds History. New York: Pantheon Books, 1986.

Spiegelman's biographical story about his father's experiences in WWII are played out with mice, cats, and pigs in this graphic representation that switches from the war to the present where Spiegelman sporadically interviews his father for the book.

TED: Ideas Worth Spreading. <http://www.ted.com/talks>. Ted Conference, LLC. New York: 2008.

This site offers twenty-minute lectures from the world's top thinkers. Of particular interest is Jill Bolte Taylor's “My Stroke of Insight” which is the story of the neuroanatomist's description of her own stroke.

Wolf, Maryanne. Proust and the Squid. New York: Harper, 2008.

This recently released book examines three aspects of the reading brain: how civilizations developed reading and learned to read, what happens in the human brain when reading takes place, and what happens in the brain that doesn't work in the usual way because of dyslexia or other anomalies.

Truffaut, Francois,. Fahrenheit 451. DVD, Los Angeles: Universal, 2003.

Truffaut's first English language film offers an international cast in an unidentifiable metropolis grappling with the major themes of the book. Filmed in the 1960s, many of the special effects are unintentionally funny, but Bernard Hermann's score is not to be missed and the extras on the DVD include an interview with Bradbury in which he explains that Hugh Hefner should be thanked for the book because he paid Bradbury $400 to write the

short story version for the first issue of his new magazine.

Appendices-Standards

Appendix A

The artwork included below is available for reproduction for classroom use only. The copyright is retained by the artist.

(Artwork follows the End Notes.)

This scene from Fahrenheit 451 shows Montag's discovery of Mildred after she has overdosed. Instruct students to examine the pictures and then write their ideas of the dialogue and narration in the spaces provided.

(See Fig.1 after End Notes)

Appendix B

This version of the drawings has the text included. Ask students to compare what they wrote in the first version to this one.

(See Fig.2 after End Notes.)

Appendix C

In this example, students will fill in their own words and the key is included for teacher use rather than for distribution. This is the scene with Montag and Clarisse and the flower.

(See Fig.3 and Fig.4 after End Notes.)

Appendix D

Peer Response Form for Graphic Story

Your Name _____ Date _____

Classmate whose work you are reviewing _____

Rate the success of the story according to the following point system:

Excellent—5 Very Good—4 Good—3 Fair—2 Needs Improvement—1 Absent--0

Does the story relate to the pictures?	5	4	3	2	1	0
Does the story make sense?	5	4	3	2	1	0
Are there gaps in the story where some of the pictures were ignored?	5	4	3	2	1	0
Did the writer include details?	5	4	3	2	1	0
Did the writer include dialogue?	5	4	3	2	1	0
What is your overall impression of the the story?	5	4	3	2	1	0

Add any comments or suggestions here

Appendix E

REFLECTIVE ESSAY ASSIGNMENT

Now that you have finished creating a graphic story, write a short essay reacting to the experience. Think about how you first reacted to the pictures without words. Then think about how you determined how to add the words to the pictures. Finally, assess your success in creating your own story from pictures. What is the strongest part of your story? What do you like best about it? How will relating pictures to words help you to visualize the next time you read a book?

Standards

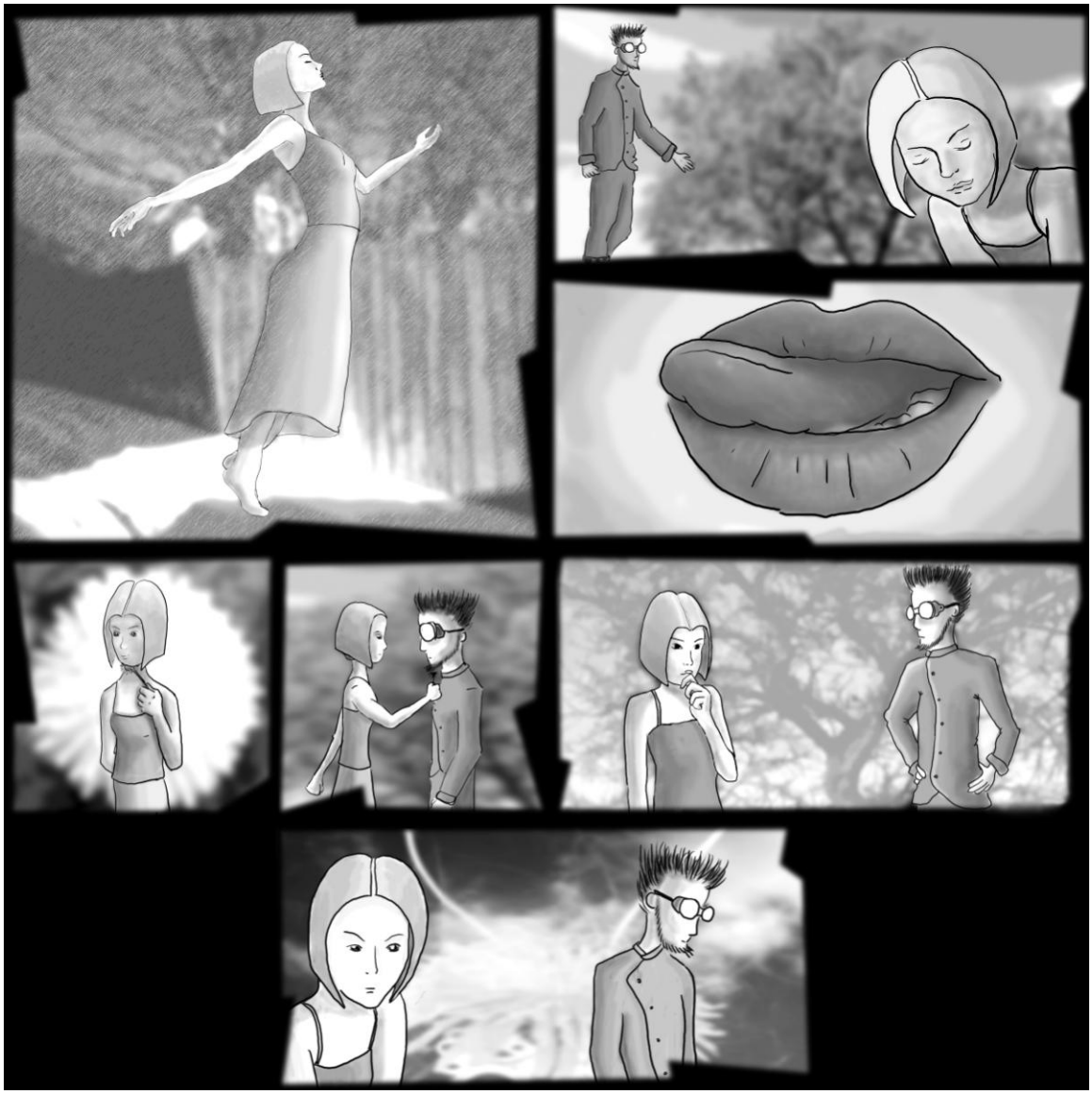
Pennsylvania Content Standards for Communications: Reading, Writing, Listening, And Speaking

1. All students use effective research and information management skills, including locating primary and secondary sources of information with traditional and emerging library technologies.
2. All students read and use a variety of methods to make sense of various kinds of complex texts.
3. All students respond orally and in writing to information and ideas gained by reading narrative and informational texts and use the information and ideas to make decisions and solve problems.
4. All students write for a variety of purposes, including narrate, inform, and persuade, in all subject areas.
5. All students analyze and make critical judgments about all forms of communication, separating fact from opinion, recognizing propaganda, stereotypes and statements of bias,
recognizing inconsistencies and judging the validity of evidence.
6. All students exchange information orally, including understanding and giving spoken instructions, asking and answering questions appropriately, and promoting effective group communications.
7. All students listen to and understand complex oral messages and identify the purpose, structure and use.
8. All students compose and make oral presentations for each academic area of study that are designed to persuade, inform or describe.
9. All students communicate appropriately in business, work and other applied situations.

End Notes

1Ovid J.L. Tzeng, Daisy L. Hung, Bill Cotton, William S-Y Wang, "Visual Lateralisation Effect in Reading Chinese Characters," Nature, vol. 282: 499-501; Ovid J.L. Tzeng, William S-Y Wang, "The First Two R's," American Scientist, vol 71: 238-43


IT WAS LIKE COMING INTO THE COLD MARBLED ROOM OF A MAUSOLEUM AFTER THE MOON HAS SET.
THE ROOM WAS NOT EMPTY.
THE LITTLE MOSQUITO-DELICATE DANCING HUM IN THE AIR,
THE ELECTRICAL MURMER OF A HIDDEN WASP, SNUG IN ITS SPECIAL PINK WARM NEST.
HE PULLED OUT HIS IGNITER, FELT THE SALAMANDER ETCHED ON ITS SILVER DISC,
GAVE IT A FLICK.
"MILDRED!"
HER FACE WAS A SNOW COVERED ISLAND UPON WHICH RAIN MIGHT FALL, BUT IT FELT NO RAIN.
THE CRYSTAL BOTTLE OF SLEEPING TABLETS WHICH EARLIER TODAY HAD BEEN FILLED WITH THIRTY CAPSULES, AND WHICH NOW LAY UNCAPPED AND EMPTY . . .
AS HE STOOD THERE, THE SKY OVER THE HOUSE SCREAMED.
THE JET BOMBERS GOING OVER DID THE SCREAMING FOR HIM.
THERE WAS A TREMENDOUS RIPPING SOUND AS IF TWO GIANT HANDS HAD TORN TEN THOUSAND MILES OF BLACK LINEN DOWN THE SEAM
MONTAG WAS CUT IN HALF. HE FELT HIS CHEST CHOPPED DOWN AND SPLIT APART. HE FELT THAT THE STARS HAD BEEN PULVERIZED BY THE SOUND OF THE BLACK JETS. THAT WAS HIS IDIOT THOUGHT AS HE STOOD SHIVERING IN THE DARK, AND LET HIS LIPS GO ON MOVING AND MOVING.




THE RAIN WAS THINNING AWAY AND THE GIRL WAS WALKING IN THE CENTER OF THE SIDEWALK WITH HER HEAD UP AND THE FEW DROPS FALLING ON HER FACE.
SHE SMILED WHEN SHE SAW MONTAG . . .
HELLO.
WHAT ARE YOU UP TO NOW?
I'M STILL CRAZY. THE RAIN FEELS GOOD. I LOVE TO WALK IN IT.
YOU MIGHT LIKE IT IF YOU TRIED . . .
RAIN EVEN TASTES GOOD.
IT'S THE LAST OF THE DANDELIONS THIS YEAR.
HAVE YOU EVER HEARD OF RUBBING IT ON YOUR CHIN? IF IT RUBS OFF, YOU'RE IN LOVE.
WELL?
FINE! LET'S TRY YOU NOW.
IT WONT WORK FOR ME.
WHAT A SHAME . . .
YOU'RE NOT IN LOVE WITH ANYONE.
YES I AM! I AM VERY MUCH IN LOVE!
IT'S THAT DANDELION, YOU'VE USED IT ALL UP ON YOURSELF. THAT'S WHY IT WON'T WORK FOR ME.
I'VE GOT TO BE GOING. SO SAY YOU FORGIVE ME. I DON'T WANT YOU TO BE ANGRY WITH ME.
I'M NOT ANGRY. UPSET, YES.