

Storytelling in the Brain and in the Classroom

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This paper reviews some recent research which lends evidence to support the intuitive and experience-based notion of teachers that stories are an effective teaching tool. This is followed with some practical tips for teachers on how to integrate storytelling into the classroom.

Listening to stories is a natural part of every person's experience and many teachers have discussed how storytelling can be a powerful pedagogical tool (e.g. Abrahamson, 1998). This paper reviews some recent research which lends evidence to support the intuitive and experience-based notion of teachers that stories are an effective teaching tool. One of the fields that has always supported the use of storytelling is Neuro-Linguistic Programming (NLP) and recent evidence and theories from neuroscience and cognitive linguistics are providing evidence for effective techniques that have long been advocated by NLP. The paper begins with a review of some recent research and concludes with some practical tips from the field of NLP for teachers on how to integrate storytelling into the classroom.

Metaphors We Live By

In a highly readable book, *The Storytelling Animal*, Jonathan Gottschall (2012) explores how evolution has wired our brains for storytelling and how a story powerfully communicates connections between cause and effect, helping us to learn vicariously from other people's experiences and avoid the same mistakes. But what is happening in our brains when we listen to those stories and how can we better utilize the rich potential learnings of

stories for our learners? In *Metaphors We Live By*, George Lakoff (1979) proposed that our entire conceptual meaning system is based around meaning and story. For example, when someone says “I love you”, we do not get meaning out of that utterance by using a dictionary definition such as “Love is a deep romantic or sexual attraction”, but rather understand it by using metaphors such as ”LOVE IS A PHYSICAL FORCE” which leads naturally to metaphorical extensions such as “I can feel the magnetism between us” or “I’m really attracted to you.” Of course, we can use multiple metaphors to understand a concept. For example, “LOVE IS A FIRE” leads to “his latest flame” and “I don’t want to be burned.”

While Lakoff’s work was based on linguistic evidence, in a recent book, *Louder than Words*, one of his students called Benjamin Bergen (2012) discusses the ability of modern neuroimaging techniques such as fMRI and CT scans to show us how sensory words activate the corresponding cortex in the listener’s brain (visual, auditory, motor, somatosensor). When we listen to a PowerPoint bulletpoint presentation with typical academic non-sensory language, the Broca and Wernicke areas activate in order to transform language into meaning. But listening to sensory language such as stories activates other areas of the brain necessary to actually experience the story. For example, Gonzalez (2006) has showed that a word such as “cinnamon” activates the same neural area as when a person actually smells cinnamon. Similarly, Boulenger (2012) showed that “the meaning of action words embedded in sentences is reflected by somatotopic activation of precentral motor systems.” Oatley (2011) suggests that our brains create a running sensory movie based on the stories we read or hear. These come together in the theory of embodied simulation which suggests that words that we hear or read or even say to ourselves actually create experiences inside our brains.

When we look at mental practice, we can see the effects of this internal experience. Feltz & Landers (2007) describe sports where mental practice has been linked with substantial improved actual practice. Storytelling is one way to create similar mental practice in the classroom which can help

students to create rich internal experiences.

How do we know that our stories are actually causing experiences in the students' brains? The neurocoupling model suggests that a listener's brain actually comes into sync with the storyteller's brain (Stephens et al, 2010), and it demonstrates that the listener is very active in creating internal experiences from the words that echo the storyteller's own brain patterns. Interestingly, the listener can even move ahead of the storyteller at times as they predict what will happen.

As teachers, we can learn a lot from this research. Our words are not just words as Bergen says, they are “louder than words”, and they actually create experiences in our students' minds. We can use this to help our students to learn vicariously through stories or to prepare for future experiences in the world by inducing experiences mentally in the classroom. We can also instill desirable beliefs through story such as “mistakes are important in learning.” Neuroscience and cognitive linguistics are showing us that our words create experiences and we should choose our words carefully.

As teachers, we can tell our student stories of how Taro travelled overseas, or how Tomoko learned English successfully, or wrap up our lessons in stories about bears or fairies. Even if we simply wrap up our regular content in stories, we get about 30% increase in comprehension (Arya & Maul, 2012). All of these are effective ways of generating rich experiences in our students' minds and helping them to learn effectively. As Gotschall pointed out, we are indeed storytelling animals, and stories are a powerful way to help our students learn vicariously.

Some More Questions

Recent research in neuroscience, cognitive science, and linguistics are showing us how stories actually cause learning in the brain, but as usual with such research, answering some questions leads to more questions. Some of these are given below:

- How does the use of voice in stories show up in neuroimaging studies. e.g. the effect of tempo, pitch, rhythm, dynamics, timbre on the listener's brain.
- Limiting and guiding listener focus (e.g. through storytelling) and a movement from external to internal focus are also characteristics of hypnosis. What data is available from the study of hypnosis that may be relevant?
- Students seem to forget that they are listening in L2 when they are truly engaged in a story. Is there some corresponding neurological shift?
- What are the physical signs of being engaged in a story (e.g. leaning forward, eyes focused on speaker, defocused eyes) and are these signs of underlying neurological changes?
- What stories are useful for your students, i.e. what internal experiences do you want to help them to create in order to learn more effectively?

Practical Tips

Storytelling has many benefits in the EFL classroom and other learning contexts including providing listening practice, aiding in vocabulary acquisition, and motivating students. The section below will introduce some tips from the field of NLP to help you make storytelling into an even better learning experience in your classroom or learning context.

The field of neuro-linguistic programming (NLP) developed in the 1970s when Richard Bandler and John Grinder decided to study and model the communication patterns of expert communicators including family therapist, Virginia Satir, and hypnotherapist, Milton Erickson. Both of these people were famous for their ability to communicate effectively in ways that would help a client change and learn. One of the ways that they achieved this was to use stories in their communication in order to help their clients to learn to look at the world and at problematic situations in new ways. Bandler and Grinder went on to codify the language patterns of

these expert communicators and others in a way that could be understood easily. More importantly, the results of their modelling means that teachers like you can also learn to use these language patterns and techniques in the storytelling in your classrooms.

Below I introduce just a few of the many tricks and techniques that NLP has modelled from these experts of storytelling. At the end of each section, I have added a few tasks for the reader. I invite you to enjoy trying out these tasks and I hope that they will help you to bring these useful NLP tips effectively into the stories of your own classroom, creating an even better learning environment for your students.

Tip #1: Spatial anchors

Perhaps one of the simplest and most important things that you can do in the classroom is to create a special location for your storytelling. It is likely you already use special locations or areas of your classroom to some degree, but you may not have thought about it consciously yet. For example, you might stand behind the teacher desk when you take the roll. Or you might have particular areas on the blackboard or whiteboard where you write things like homework or class activities. Many teachers have a space on the left hand side of the board for classroom activities and space on the right hand side of the blackboard for homework. Why do we do this? We choose and use specific areas so that students become aware of these areas and know to look in these areas for the list of classroom activities or the homework.

In NLP, we call this use of a standard location a spatial anchor, and this simple concept can be very powerful in preparing students to easily enter the state of curiosity that is best for listening to a story. In my own classroom, I maintain a special area that I use for storytelling and I only enter that area when I am going to tell a story. When I finish the story, I make sure that I have stepped out of that area again.

In a classroom, you can emphasize this storytelling area physically, for example by setting a chair on the left hand side of the teachers desk at the

front of the classroom. Always make sure that you keep this spatial anchor completely clean. In other words, if you are doing any other activity such as taking the roll or teaching vocabulary to students, make sure that you are in another area of the classroom.

Now if I were to ask my students about the spatial anchors, maybe some or even most of them probably would have no conscious awareness of how I use the positions in the classroom, but at an unconscious level they are certainly aware. This unconscious awareness is particularly obvious when we use the storytelling spatial anchor in the classroom. After I have used it several times, then each time I step into the position I can see students start to lean forward slightly and become more curious about what story is going to be told.

Task

1. What positions do you already use in your classroom for particular activities?
2. What positions would you like to set up for your storytelling?
3. Draw a map of your classroom and show the spatial anchors that you would like to use.

Tip #2: Enriching Maps of the World with Stories

One of the fundamental concepts of NLP states that the map is not the territory. In other words, the mental maps that we have to represent the world are not actually the same as the world itself. People don't interact with the world directly but rather interact with their maps of the world. Some of these maps are more useful than others. For example, a student who has a mental map with the belief that "learning English is difficult because I am Japanese" is likely to learn less effectively than another student who has the belief "English is easy to learn because there are so many fun resources on the Internet". Of course, we can try to get students to consciously change their beliefs and mental maps, but sometimes it is easier to change a belief or install a new belief at an unconscious level using a

story.

Stories are of course often used as teaching tools. Many stories that are told to children are actually moral lessons in disguise. For example, recently I had the students in one of my classes bring in stories to read to other students. One of them brought the classic children's story, *The Goose Who Laid the Golden Egg*. I have retold it briefly below:

Once upon a time, there was a man who had a goose that wouldn't lay any eggs. Then one day, to his great surprise, he found a big golden coloured egg beside the goose. It was as heavy as lead, and at first he thought that it was a stone. Then he realized that it was an egg of pure gold! The next day, the goose laid another golden egg, and then another on the next day, and so it continued every day. The man sold the golden eggs and became very wealthy. As he grew more wealthy, he began to become more greedy. One day, he thought to himself, "why do I have to wait each day for the goose to lay the golden egg? Inside the goose, there must be a huge store of gold." So the man got a sharp knife and killed the goose. He opened up its belly and he got a big surprise when he looked inside. Because inside, there was nothing there at all.

The student then went on to explain the 'moral' or 'meaning' of the story, saying that "the meaning of the story is that you should think carefully before carrying out any serious actions." In our classrooms, there are many 'morals' or messages that we may want to convey to our students.

Task

1. What is a message you would like to send to the students in your class?
2. What is a story that can be used to convey the message in a fun metaphorical way?

Tip #3: Teaching Patterns through Stories

Isomorphism! This complicated sounding word is simply another way of saying that one thing can be equivalent to another. In NLP, we would say that one map is equivalent to another map. The patterns that we want our students to learn may have an isomorphic equivalent in a story, or we can construct a story that provides an isomorphic equivalent. In the story of the Golden Goose, the man and the goose are unlikely to actually exist in the real world, but isomorphism allows us to relate these ideas to a parallel situation in our own lives. The underlying pattern or deep structure of the story is the same.

Stories are a great way of teaching patterns and ideas without explicitly teaching them. For example, through a story a problem can be solved. While solving the problem in the story may not actually change anything in the real world, if we design a story properly, we can use it to teach a problem-solving strategy. In the story of the Golden Goose above, we were teaching students not to rush into serious things. This kind of negative advice can be very useful. We can also use stories to teach students positive steps on how to achieve something. Here is a little story that I constructed to teach a particular pattern.

Taro really wanted to speak English better because he realized that many companies in Japan now require a good level of English, and everyone wants a good job, don't they? So Taro started to think about other things that he could do well. He is really good at baseball, so he started remembering how he learned to play baseball. He really admired the people on the top baseball team in the school and he imagined himself playing there on that field with the whole school watching him. Those players were great role models for him and he dreamed of being like them. But of course, Taro knew that dreaming and imagining is not enough. You've got to take action, don't you? So every day after school, he used to go to a particular place and practice with a group of his friends. And when he practiced, it was fun – it didn't seem like work at all – he just felt excited. Sometimes, he got

tired through practice but he just kept on going because he really wanted to be good. As he practiced, he became more and more interested in baseball and he began to notice things related to baseball everywhere that he looked. It took quite some time, but eventually Taro was able to learn all the necessary skills and use them in the baseball games. Eventually, all of his hard practice paid off and he was selected for the top baseball team in the school. Now, it was him that the whole school was watching and admiring. Imagine that – he had become a role model for other people!

In this story, the goal was to model a good pattern for learning English by telling the story of Taro remembering the steps he took when he was learning baseball. For your students, it doesn't have to be baseball, of course. It can be anything that your students have already learned successfully. Some of your students have learned how to play a sport very well. Others have become highly skilled at a musical instrument or tea ceremony or some other skill that took a lot of effort.

We can use stories like these to draw students' attention to the fact that they already have successful learning experiences. At an unconscious level, these stories will also help students to revitalize the learning processes that they have used in the past. In this way, we are teaching or reteaching patterns of success through our storytelling.

Task

1. What is a pattern or behaviour that you would like your students to develop?
2. What are the steps of the pattern?
3. What is a story that you could use to teach this pattern?

Tip #4: Visual, Auditory and Kinesthetic Language (VAK)

When we use language, we are actually creating images in other people's heads. It's almost magical. Through a few well chosen words, we can create vivid images, sounds, and feelings within our students' minds. Take a few

moments to notice the differences between these two descriptions of the same event.

Description 1

John went into the room. He sat down and looked around. He was scared.

Description 2

John looked down at the discoloured carpet on the corridor floor behind him, took a deep breath and then, pushing the cold metal door open, he walked slowly and nervously into the small room. There were three gray office chairs in the center of the room. He chose the one nearest the door, sat down and looked around. The gray walls and low ceiling of the room, combined with the constant irritating hum of the ancient air conditioner unit, added to the heaviness of the air. He felt a drop of cold sweat on his neck. He was scared.

These descriptions create very different results in the mind of the listener. The second description makes much better use of Visual (V), Auditory (A), and Kinesthetic (K) words. Modern neuroscience research shows that we understand visual words by activating the visual cortex in our brain. For example, when we hear the words “discoloured carpet”, we comprehend that word by using the visual cortex in our brain to create an internal mental picture of a discoloured carpet. Similarly, auditory words such as “hum” activate the auditory cortex and kinesthetic words such as “heaviness” and “felt a drop of cold sweat” activate the sensorimotor cortex as we listen and try to create meaning out of the words.

Using rich imagery in our stories is not just poetic and more interesting stylistically. The use of VAK language in description 2 actually activates the listeners’ brains at a much deeper level. By using this kind of language, we are engaging the students’ attention and neurological resources at a much deeper level.

Task

1. What is a story that you have used with your students in the past, or a story that you would like to use?
2. What words can you use to make the pictures more real for your students?
3. What words can you use to make the sounds clearer for your students?
4. What words can you use to help your students feel the actions of the characters in the story and to feel the objects in the story?

Tip #5: Split Stories

Do you remember those old television programs like *The Six Million Dollar Man* that used to finish each episode with a crisis or dramatic situation, ending with the inevitable “To be continued ...”? Well, maybe you aren’t old enough, but we can see the same technique being used today in more subtle ways. Even on social networking sites like Facebook, the constant news feed is using the same kind of technique. Why do you think television program makers and website designers use this technique? The answer is that they want us to feel a heightened sense of curiosity, and as teachers that is exactly the same thing that we want to see in our students. It is when students are really curious that they are ready to learn.

Split stories are a common technique used in NLP. They came out of the work of the hypnotherapist, Milton Erickson. Erickson used to tell a story to his clients and then switch effortlessly into another story, then finally returning to finish the original story. In the split story technique, you begin telling a story and stop at an important moment in the story. You can then step out of your storytelling position (remember tip #1), look back and point at your storytelling location where you were standing or sitting a few moments before, and say “you’re probably curious about what happens next in the story, and it’s good to be curious when you’re learning English, so keeping that curiosity, let’s move on to the next activity, and we’ll come back to the story later.”

Split stories can be particularly useful when you want the students to unconsciously come up with their own answers to a problem or question. For example, in the story about the Golden Goose, we could stop before the man killed the goose and say something like, “and what do you think happened in a situation like this when the person didn’t think seriously about the consequences of his actions?”

Task

1. What is a story that you could use as a split story?
2. When could you break the story in order to maximize student curiosity?

Tip #6: Making Suggestions Through the Words of a Character in the Story

Another common technique from NLP is to make suggestions by saying them as someone else’s words. In a therapy situation, the therapist might use this NLP technique by saying something like, “I heard of one person who overcame depression by saying to themselves everyday, ‘you can do a little exercise and think of a little thing that you are grateful for.’” Although the therapist has not said the words directly to the client, the effect can be the same.

In our classrooms, we can use the characters in the stories that we tell as a wonderful way of getting suggestions across to our students without actually saying it to them directly. For example, we can get a character within a story to say the words that we want our students to hear and accept. For example, if I were to say to you that my NLP trainer told me that Richard Bandler had told him that stories are absolutely wonderful... you would still receive the main message that stories are absolutely wonderful, although I didn’t actually say it to you, did I? In NLP, this is called an embedded quote because the suggestion is embedded in at least one level of quotation. Here is an example that you might use in a story:

And the queen said to the knight, “in order to succeed on your quest, you must work hard every single day. Just a few minutes can be enough, yet you must work hard every single day.” When the knight nodded, the queen added, “yes, you already understand, don’t you, so you will work hard every single day.”

You can emphasize an embedded suggestion like this in several ways including:

- making a particular gesture when you say the important words
- pausing before the suggestion
- changing the tone or speed of your voice when you say the suggestion

In NLP, we call this analogue marking because it marks out that particular part of the sentence as being important in some way. Your students probably won’t even notice consciously, but at an unconscious level, the analogue marking makes it more likely that they will accept the greater importance of those words.

Task

1. Now that you have learned how to embed suggestions in a story, you might like to use that ability to get your students to believe things that will support them in their learning. What would you like your students to believe? What suggestions would you like to give your students?
2. What story could you incorporate these suggestions into?
3. How can you incorporate these beliefs and suggestions into your stories so that students are exposed to these facilitating beliefs many times and can eventually accept them and adjust their behaviour appropriately?
4. Practice by recording yourself on audio or video telling a story. Now tell the same story again making deliberate use of analogue marking with your voice to mark out the important points.

As you can see, NLP has a lot to offer teachers. In this short article, we have introduced just a few of the techniques that you can use in your storytelling to motivate your students, help them take on beliefs that support their learning, and help them to learn both the content of your course and the skill of how to learn.

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