The Science of Empathy

(November 2019)

Do you ever ask yourself why yawning always seems to be a group activity? Maybe you wonder why you giggle uncontrollably when a friend bursts into laughter, even when you don't know what made them laugh. Or perhaps you wonder why the tears of an actor in a movie can elicit the same in their audience. The reason we react the way we do to the emotions of others—joy, pain, discomfort—is, in no small part, a result of empathy that we have likely developed through the functioning of our mirror neurons.

A mirror neuron is a specialized cell in the human body that fires when a specific action is either performed or observed, resulting in the replication or 'mirroring' of that action or emotion. Research on these neurons began with primates, such as monkeys. We have not studied individual neurons in humans, so scientists have applied the research done on primates to hypothesize about the implications that mirror neurons have on human beings. The research points to some pretty interesting findings.

When we see another person smile, our mirror neurons likely play a part in our instinct to smile back. When someone near us experiences joy, pain, or sorrow, we often feel a lesser version of the emotions they are experiencing. This isn't simply

©2019 WILSON LANGUAGE TRAINING CORPORATION. ALL RIGHTS RESERVED (WLTC-1078280764-23168)

because of innate empathy, but because we honed that empathy through the mirroring of those experiences. We not only react to seeing what someone experiences but also feel it to some degree ourselves. This helps us better read the feelings and consequently the actions of others. It also aids us in our ability to empathize, communicate, and connect with other members of our community. Even the non-human members!

Not only do these mirror neurons have the potential to teach us about the feelings and emotions of others, but some research suggests they may also help us delve deeper into the study and acquisition of language. Research has told us time and time again that the best way to learn a language is through immersion. The observation of facial movements and actions, in tandem with speech, is 'mirrored' by the subject, which helps support learning. Some research even supports the idea that if someone simulates what they are reading while they read it, they are more likely to retain that knowledge.

While the extent of their role is still unknown, it is apparent that mirror neurons do play a part in how we develop empathy and connect to people around us. Further research on mirror neurons is underway, and it seems like it's only a matter of time before we have a better understanding of how these neurons impact our day-to-day life.

©2019 WILSON LANGUAGE TRAINING CORPORATION. ALL RIGHTS RESERVED (WLTC-1078280764-23168)

Teacher Resources – Vocabulary

Potential Words for Further Study: These words not only help with comprehension of the passage, they also appear more frequently in a wide spectrum of reading, especially in academic text. Therefore, further study of the meaning of these words may be beneficial. The words on this list can be incorporated into subsequent lessons.

Wilson Reading System Vocabulary Level: AB

community (n) a group of people who are similar in some way

research (n) work that involves studying something and trying to discover facts about it

Words for Quick Discussion: Consider discussing these words as they are encountered to help students comprehend the passage. A quick discussion in student-friendly language while reading the text is best.

Wilson Reading System Vocabulary Level: B

elicit (v) to draw forth; evoke

empathy (n) the ability to share another person's feelings and emotions as if they were your own

hone (v) a skill, technique, idea, or product, you carefully develop over a long period of time

immersion (n) complete involvement in a subject

innate (adj) a quality or ability that a person is born with

instinct (n) the natural tendency that a person or animal has to behave or react in a particular way

neuron (n) a cell which is part of the nervous system

Definition Source: *Collins English Dictionary. Retrieved from* https://www.collinsdictionary.com/us/dictionary/english

This text passage is archived under *Science & Technology.*

©2019 WILSON LANGUAGE TRAINING CORPORATION. ALL RIGHTS RESERVED (WLTC-1078280764-23168)

Text Easability Scores

If you would like to measure the text easability scores of this passage, please follow the directions below.

1. Visit the Coh-Metrix Text Easability Assessor website at *http://tea.cohmetrix.com/*. If you do not already have a login and password, create one. It is free and easy to sign up for access to the website.
2. Once you have created an account and sign in, you will be taken to a page with an empty, white text box. Copy and paste the text from this passage into the empty, white text box. Make sure you are only copying and pasting the body of the passage. Do not include the title, date, or any of the resources present in the passage.
3. When you have pasted the passage into the text box, click on the red button beneath the text box that says "Analyze." There will be a short delay and after a few seconds, you will see a bar graph appear to the right of the screen.
4. The bar graph will give you the percentages for several text characteristics including: narrativity, syntactic simplicity, word concreteness, referential cohesion, and deep cohesion.
5. Below the bar graph, the Flesch Kincaid Grade Level is also included for your benefit.
6. Lastly, a paragraph is provided that explains the meaning of the measurements of the text characteristics for your particular passage.
7. Once you have completed measuring your passage, you can click on the "Clear" button below the text box and measure another passage, if you wish.

©2019 WILSON LANGUAGE TRAINING CORPORATION. ALL RIGHTS RESERVED (WLTC-1078280764-23168)