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Understanding Auditory Learning

Integrating Listening into the K-12 classroom



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Listening offers exciting possibilities for meeting the needs of the Common Core State Standards and 21st century learners. The use of listening instruction can significantly enhance student learning if properly designed and implemented. This paper summarizes the latest research on listening and describes the principles behind effective listening instruction.

Overview

Today's K-12 students are different from even their recently graduated peers. These students are *digital natives*, a term attributed to futurist Marc Prensky to distinguish between those who have grown up with technology and those who have adapted to it. They live in a world in which digital technology is part of their daily lives; it's their "native language" and they expect to use technology in school. In fact, use of technology by 5-18 year olds is at its highest level ever and is projected to increase (SEG, Understanding Multimedia Learning). This growing reliance on technology combined with what we know about brain processing offers enormous potential for instruction. Research indicates that the brain processes information using two channels – visual and auditory. Using technology-based tools, we can take advantage of this auditory processing capability and dramatically enhance student learning through auditory instruction.

While listening plays an important role in people's lives – between 65 and 90 percent of one's time is spent listening (Gilbert, 2004, p. 20) – it is a skill that is often neglected or omitted entirely from classroom instruction (Hooper, 2007). The purpose of this paper is to highlight how the brain processes auditory information and its potential for use in classroom learning.



*Hearing is an active process
(Feng 2000).*

Hearing is Visual: How the Brain Processes Information

As Albert Feng (2000) notes, language and hearing are interconnected with the visual. So much so that the brain "sees" what it hears. This is called "auditory scene analysis." Every time a person hears something, the brain visually simulates what it hears – and this even results in eye-tracking movement (Brigman 1990). For example, when someone listens to a story about people on different floors in a tall building, their eyes track upwards to follow the story

with each rising level. They are mentally simulating the scenes as they process the stories (Bergen p. 63). In addition, there is visual stimulation underlying language. When people listen to stories about a ball moving toward or away from them, their eyes track the movement. Understanding meaning, at least in part, happens in the mind's eye (Bergen p. 66). This makes listening an extremely visual medium with great potential for use in teaching and learning.

“Immersed Experience View”

A number of researchers agree on a concept called “immersed experience view,” the idea that understanding language is akin to actually “being there” and experiencing events the language describes. Research provides compelling evidence showing that people are simulating what it would be like to “be there” in a scene. Even when using metaphorical language, people sometimes perform these embodied simulations (Bergen p. 68 & 206).

How Hearing Becomes Understanding

Sounds are processed in different regions of the brain as information ascends all the way to the auditory cortex where higher order processing is thought to occur. People use their idiosyncratic mental resources to construct meaning. When engaging a visual system to understand language, a person does so creatively and constructively (Bergen 2012). Hearing something many times not only causes the brain to respond synchronously but also rewires the synapse in the auditory system to improve the efficiency of responding to those specific traits (Horowitz, p. 107). In other words, neural learning is taking place, which means that people can be taught to be better listeners. Neurons will grow new processes so they can change their wiring pattern (Horowitz, p. 107).

What does Effective Listening Look Like?

Approximately 10% of the population listens effectively (Hopper, 2007). There is a small body of research exploring what effective listening looks like. Listed below are some of the most important principles of auditory learning and what research says about how they contribute to student learning:

Effective listening includes:

Problem Solving: *Using the general idea of what’s heard to guess the meaning of new words*

Planning-Evaluation: *Planning ahead for listening, making notes, setting a goal for listening*

Focusing Attention: *The more focused the listening, the better the learning*

Stories provide much more than entertainment: they also help us understand ourselves and the world around us (Cohen & Wolvin, 2011). Researchers recognize that stories are central to communication and trained story listeners are more cognitively focused (Cohen & Wolvin, 2011). Although storytelling is important, scholars are beginning to emphasize the need to refocus on story listening (Cohen & Wolvin, 2011). Thus, great potential exists to build classroom instruction around stories to improve students’ listening skills and overall comprehension.

Individual Learner Differences and Auditory Learning

As with any instructional tool, listening-only tools may work better for some students than others. There is a growing body of research showing that students learn in different ways and that information should be presented in a variety of ways to engage students with different learning styles.

Howard Gardner and his colleagues at Harvard University suggest that individuals can exhibit a wide range of abilities, and that intelligence is best thought of as multiple areas of expertise or as multiple intelligences (Gardner, 1993; Gardner, 1999). Gardner suggests that there are eight distinct intelligences: linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal and naturalistic.

According to Gardner, “Students learn in ways that are identifiably distinctive. The broad spectrum of students would be better served if disciplines could be presented in a number of ways and learning could be accessed through a variety of means.” Auditory learning is particularly effective for auditory learners.

The Potential for Listening Instruction

Research shows “you can improve your listening skills by practicing ... techniques and principles” (Texas A&M University Student Counseling service, n.d.). To close this gap, however, requires quality listening instruction. Researchers lament that recourses for listening instruction are simply lacking (Hopper, 2007). In addition, researchers would like to develop a listening assessment for first language speakers as it would be the basis for developing curriculum for listening (Janusik & Keaton, 2011). The curriculum would be a welcome addition to ease tension between theory and application in teaching listening (Januski, 2010).

By adding the standard of speaking and listening, the Common Core State Standards is recognizing that listening is crucial to a child’s success.

Early literacy development and long-term school success hinge on a child’s acquisition of speaking and listening skills (Brigman, Lane, Switzer, Lane, & Lawrence, 1990). Schools must determine how best to teach listening skills effectively. This might include pairing listening with reading, writing, and speaking, teaching students to modify listening for a variety of purposes, and providing multiples opportunities to model and practice effective listening (Cavner & Gould, 2003; Goulden, 1998a).

Conclusion

Research has shown that listening skills are key to students’ college and career readiness. Few people listen well, but the skill can be improved with targeted instruction. The new emphasis on speaking and listening in the Common Core underscores the importance of developing and using tools that focus on listening. Thus, including listening-only tools as part of instruction can significantly enhance student learning.

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