

# Classroom Audio Enhancement

by Nancy Knowlton

The two most information-intensive experiences that humans have are seeing and hearing. These two senses represent the means by which most of us absorb the majority of information we encounter – whether we are reading a book, working on a computer, listening to a teacher paint a picture in our mind's eye, or watching and listening to a video clip.

It has long been accepted that a computer needs to have peripheral speakers so sound files can be properly amplified. The computer's built-in speakers just don't produce the level of output needed for an entire class to hear. But what about the most common source of sound in the classroom – the teacher's voice?



## Hearing Impairment

All too often, children who have minor hearing impairments are misdiagnosed as having learning difficulties because they cannot adequately hear. Imagine what these students are coping with as they struggle to hear the teacher in today's 21<sup>st</sup>-century classroom. There is general ambient noise in the classroom – rattling papers, the low-level hum of a projector and computers, HVAC system noises, the chatter of group work, and the buzz of fluorescent lights – and all of this before the teacher speaks or perhaps plays some multimedia with audio.

In good classroom-acoustic environments, students with normal hearing recognize only 71 percent of the speech they hear. In poor listening environments, perception can fall to less than 30 percent (Crandell & Smaldino, 2000).

In these circumstances students must either ask for clarification or let it go, hoping they will be able to grasp what the teacher said from clues in later material or by following up with their classmates. These coping strategies are a poor substitute for hearing the information and instructions from the teacher directly.

## Teacher Voice Strain

Teacher voice strain is a significant issue in today's 21<sup>st</sup>-century classroom as well. As children work on projects in a busy classroom, it seems like a simple thing for teachers to raise their voice so that everyone can hear. If they do that a few times a day or a few times an hour, at the end of the day they will find that their vocal cords are strained.

If they do it over a prolonged period, it can become a chronic problem. A French survey revealed that teachers are twice as likely as other workers to suffer vocal disorders, ranging in severity from sore throats to vocal cord swelling (Sage, 2007).

A chronic cough and a raspy voice are two signs of vocal cord strain. Often teachers believe they are getting the flu or laryngitis when in fact they have simply over-used their vocal cords in order to be heard above the everyday noise in a busy and engaged classroom.

And these ailments are costly: A US study found that teachers take an average of two days' sick leave per year because of vocal disorders, and the cost for healthcare and substitute teachers is \$638 million (£315 million).

## Audio Enhancement System

There is a simple solution to both student hearing difficulties and teacher voice strain, and that is to provide the teacher with an audio enhancement system in the classroom. Teachers wear a microphone around their neck, and their voice is amplified to the classroom through speakers placed strategically around the classroom. The microphone is comfortable and unobtrusive.

An easy-to-use audio enhancement system means that the children farthest from the teacher have the same opportunity to hear distinctly as those closest to the teacher. The teacher's voice is amplified and transmitted to the speakers that are spread around the classroom, so there is no need to raise one's voice to be heard and children don't need to strain to hear.

An audio enhancement system is a must-have in today's 21<sup>st</sup>-century classroom. Not only is the system effective; it is also economical.

## References

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- Sage, Adam (2007) Teachers urged to save voice with a microphone. *Times online*. September 24, 2007. Accessed October 22, 2007 from [http://www.timesonline.co.uk/tol/life\\_and\\_style/education/article2517797.ece](http://www.timesonline.co.uk/tol/life_and_style/education/article2517797.ece)

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