Canadian Audiologist
The Official Publication of the Canadian Academy of Audiology

Doesn’t Putting a Sound Field Amplification System into a Noisy Classroom Just Add to the Overall Sound Level, and Isn’t That a Bad Thing?

Published June 10th, 2025

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There is a lot of research documenting the fact that classroom acoustics are a problem. Noise levels are often high, it’s hard for students to hear, and it’s hard for teachers to make themselves heard and to manage a classroom effectively. Research also says that putting a sound field amplification system into a classroom (where a transmitter worn by the teacher and pass-around microphones used by students sends sound to speakers in the room) is an effective teaching and learning strategy. How can this be, though? If the noise level is already high, isn’t it bad to add something that increases the level of sound in the room? And what about the Lombard effect, which tells us that people will automatically increase the loudness of their voice when there is a high sound level around them? Some have argued that sound field amplification systems add to the overall sound level and that instead, we should focus on improving classroom acoustics (Acoustical Society of America, 2015). Well, sure, but research also tells us that classroom acoustics have not improved since we started measuring them in the middle of the last century.

Educational audiologists will tell you something different about what happens to sound levels in a classroom with a sound field amplification system. In my experience, installing a sound field system in a classroom results in the overall sound level going down, and here’s why. When everyone can hear, students are more engaged, more attentive and less apt to chit chat with friends because they can’t hear the teacher (reducing the overall noise level from students talking). Teachers have better classroom management because everyone can hear them the first time. Instead of raising their voices, they can speak quietly and get students’ attention easily. Relaxed teachers with less fatigue, less vocal strain and less frustration from managing behaviour, create relaxed classroom environments where everyone hears, interacts and learns better. And that makes for a quieter classroom.

Reference

Acoustical Society of America (2015). Classroom Acoustics for Architects A companion booklet for ANSI/ASA S12.60 Parts 1 and 2. https://acousticalsociety.org/wp-content/uploads/2022/01/Classroom_Acoustics_for_Architects_4_18_15.pdf